...OLOGY DEPT.

TEXTILE WORLD

SEPTEMBER • 1944

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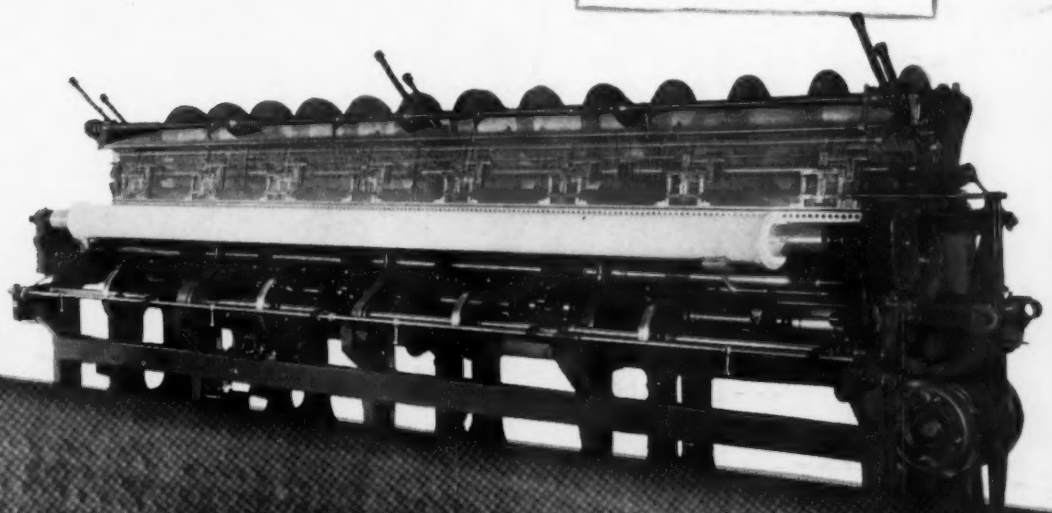

20th ANNUAL *Synthetics* SURVEY

TRICOT—a Major Trend in Synthetics

SEE PAGE 101

Truman Data on Rayon versus Cotton Tires

SEE PAGE 109

There Will Come A Day...
When Your Problem Is Cash!

You will face different buying, selling and credit conditions. New problems usually mean a changed balance sheet. Assure your business adequate cash and be prepared to meet whatever conditions confront you. Why not consult us now?

COMMERCIAL FACTORS CORPORATION

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THE CFC PLAN IS NOT LIKE ANY OTHER FACTORING SERVICE . . . THE DIFFERENCE IS IMPORTANT

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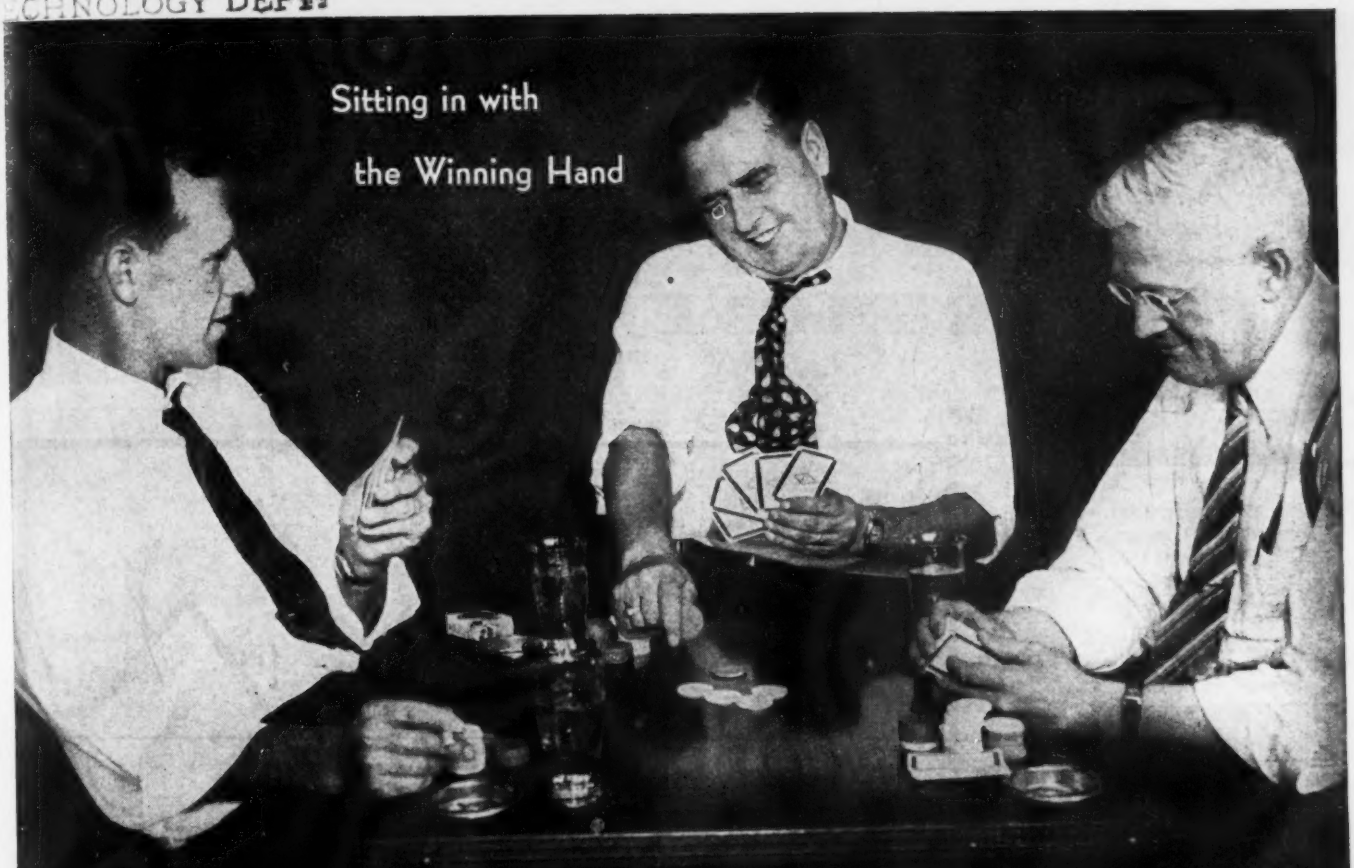
TECHNOLOGY DEPT



Here's What He Saw

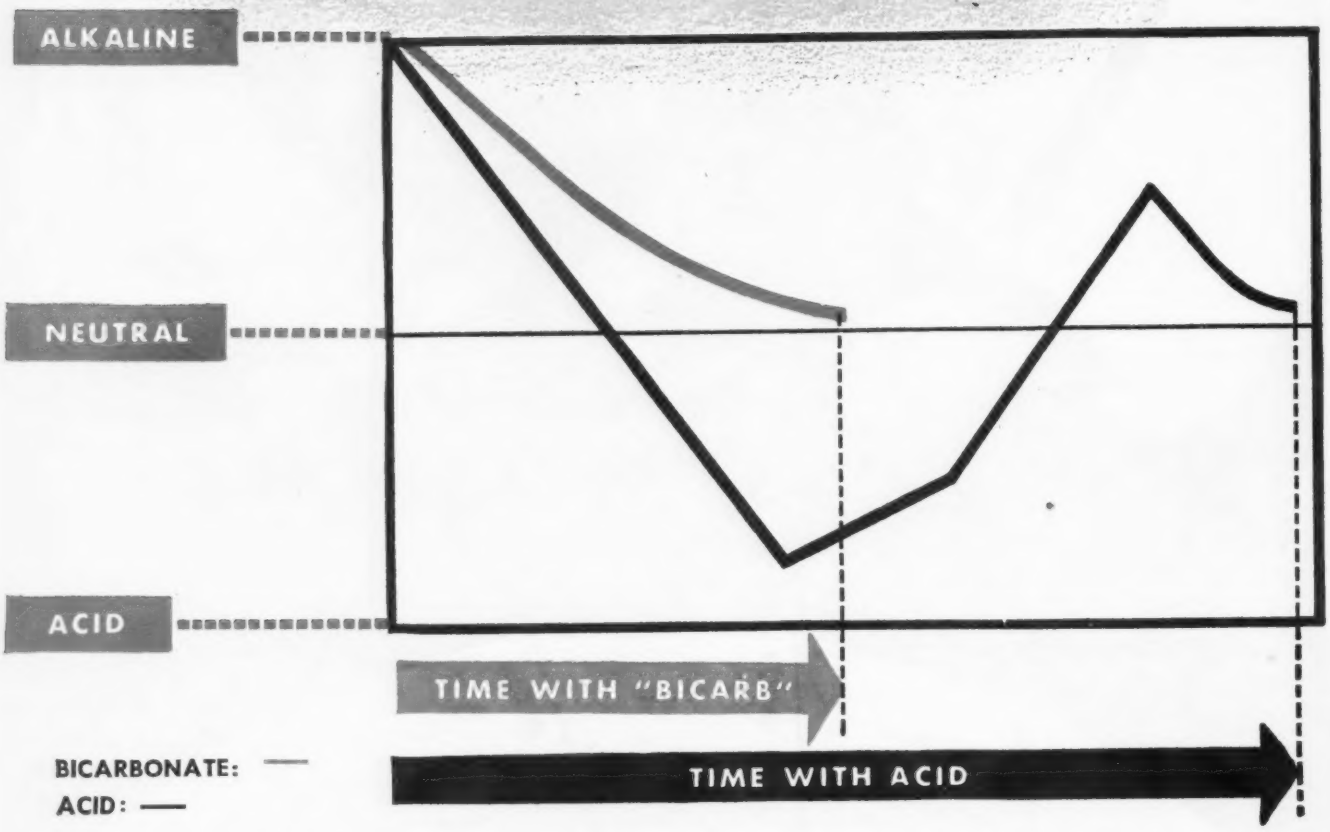
A Royal Straight Flush

A X-2 Model
202 to 224 Picks Per Minute on 40" Print Cloth
100 Looms and Over Per Weaver
K XD Model
172-182 Picks P. M. on 44" Filament Rayons
48 Looms Per Weaver
Q XL Model
120 Picks P. M. on 90" Broad Sheets
46 Looms Per Weaver
J XP Model
158 Picks P. M. on 60" Heavy Twills
28 Looms Per Weaver
10 XU Model
140 Picks P. M. on 36" Duck
24 Looms Per Weaver
10

To Win in Any Game—Whether It's Poker or the Strenuous Game of Weaving—You Must Have the Right Cards

DRAPER CORPORATION

USE "BICARB" TO REMOVE CAUSTIC!*



A NEW MATHIESON DEVELOPMENT

Eliminating acid's disadvantages, bicarbonate of soda effectively removes caustic by changing it into sodium carbonate or soda ash.

Commercially developed by Mathieson, this new process achieves decided advantages over customary acid neutralization:

- *acid resistant equipment not required.*
- *no health or other hazards involved.*
- *production speeded by elimination of additional steps necessitated by acid process.*
- *careful chemical control unnecessary.*
- *goods are washed in hot water and treated in hot bicarbonate bath, which makes them whiter, softer and highly absorbent.*

Removal of caustic with bicarbonate is applied (1) after scouring on continuous boil-off machines, (2) after scouring in jigs, (3) after warp mercerizing of yarn, (4) after skein mercerizing of yarn, (5) after mercerizing of piece goods, (6) after kier boiling, and (7) after alkaline steaming, particularly caustic steaming, in the new continuous scouring and bleaching processes.

For best results, consult our Technical Staff in regard to adapting this new Mathieson development to your particular operations. Write for further information.

Mathieson
CHEMICALS

* Developed in collaboration with Pepperell Manufacturing Company

THE MATHIESON ALKALI WORKS (INC.) 60 EAST 42nd STREET, NEW YORK 17, N. Y.

CAUSTIC SODA . . . SODA ASH . . . BICARBONATE OF SODA . . . LIQUID CHLORINE . . . BLEACHING POWDER . . . AMMONIA, ANHYDROUS & AQUA . . . HTH PRODUCTS . . . FUSED ALKALI PRODUCTS . . . SYNTHETIC SALT CAKE . . . DRY ICE . . . CARBONIC GAS . . . SODIUM CHLORITE PRODUCTS . . . SODIUM METHYLATE

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Editorial

Foreshadows of GREAT CHANGES

THIS IS THE TWENTIETH September that TEXTILE WORLD has looked around from its observation post and surveyed the progress and prospects in synthetic-fiber textiles. Two current developments make this year's survey as exciting as any which has preceded it.

One of these is the sudden blossoming of interest in tricot, a warp-knitted fabric which can now be produced at high speed.

Tricot knitting and other forms of warp knitting are ancient arts. It has long been known that they can produce more weave-like, firmer, tighter, and more run-resistant fabrics than can filling (ordinary) knitting. However, it was not until tricot machines operating at high speeds were introduced from Europe some ten years ago that the economies possible through warp knitting began to be recognized. Since then more and more investigation has been made of the subject, with the result that in recent months tricot has received particular attention from textile postwar planners.

It is especially interesting to note that the high speeds which have given this recognition impetus are possible on great widths of fabric. This is because no element of the mechanism has to travel from one selvage to the other—as does, for example, the carriage on ordinary flat knitting machines, or the yarn carrier on full-fashioned hosiery machines, or the shuttle on looms. Instead, the rapid side-to-side movement of the tricot machine is a shog of but a fraction of an inch.

This development may be of even more far-reaching importance than appears at first glance. Since modern tricot is a direct descendant of the glove-silk type of fabric, it is logical that it should first attract the attention of the continuous-filament synthetics field; but the principle may prove equally applicable to other textile fields—to staple rayon, to cotton, to wool. In fact, since wrap knitting is a close relative of warp knitting, it can be said that some interesting lightweight fabrics in coarse gage have been produced on circular machines by a combination of warp-knitting and filling-knitting principles.

THE OTHER DEVELOPMENT which proves of importance in this twentieth annual survey is the ascendency of rayon tire cord. The data presented to the Truman committee, and officially published only recently, prove that high-tenacity rayon is superior to cotton for truck tires.

While these data do not show conclusively that rayon is superior also for passenger tires, many observers see that implication—in spite of the opinions of some experts to the contrary. And the possibility suggests itself that, if high-tenacity viscose proves superior for all tire cord, it will prove superior also for other mechanical uses for which inexpensive reinforcement is the only purpose served by textile materials. Rayon is a higher-priced raw material than cotton, but there is less wastage in its processing—and the price will drop.

JARRING as are the Truman-committee revelations to the cotton division of the textile industry proper, more disturbing are they to the cotton-growing agricultural industry. The farmer, unlike the mill, cannot possibly convert to a new product for the same market. In spite of the methods used by the southern senators at the Truman hearing, there was perhaps something distinctly pathetic about their attempts to befuddle and discredit the tire experts who testified. While the futility and, in the long run, undesirability of hindering technological progress has been demonstrated over and over and over again through more than two centuries of industrial revolution, behind those senators stood the phantom multitudes of worried growers and pickers.

It is, of course, in the correct tradition of democracy that the representatives of a constituency in Washington do what it wants them to do; but congressmen, either senators or representatives, could not be in a worse predicament. Their very efforts to maintain a profitable price for cotton place their constituencies in the hands of those who would abandon cotton altogether—while the clouds of foreign competition hang more and more darkly over the cotton-export business. The true hero of the cotton-growing states will be the man who leads a large number of the farmers away from cotton into a more promising livelihood.

It is comforting from the strictly textile angle to note that these two potentially important changes are entirely within the industry proper and involve no threats from the outside. New technologies encourage an old industry to rejuvenate itself, as is evidenced by the high quality of the new rayon-tire-cord plants.

Edwin D. Fowle

"Bolts" FROM THE Blue

IT TAKES a lot of cloth to float a sky army down to earth ... more than 68 square yards for every 28-foot 'chute

To turn out the tremendous yardage of textiles demanded by every branch of our armed forces means round-the-clock work for machines. And mill operators everywhere are assuring continuous, trouble-free operation by lubricating machines with Texaco.

Texaco Stazon, assures efficient lubrication with minimum spoilage of yarn or fabric due to oil stain. It stays on fast-moving cranks, etc., withstanding load shocks without splattering, creeping, dripping. Its high stability prevents excessive formation of non-lubricating deposits in bearings or enclosed housings.

For loom cams, use *Texaco 919 Lubricant S.*

Texaco lubricants have proved so effective in service that they are definitely preferred in many fields, a few of which are listed at the right.

Texaco Lubrication Engineering Service is available to you through more than 2300 Texaco distributing points in the 48 States.

The Texas Company, 135 East 42nd Street, New York 17, N. Y.

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★ More stationary Diesel horsepower in the U. S. is lubricated with Texaco than with any other brand.

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★ More buses, more bus lines and more bus-miles are lubricated with Texaco than with any other brand.

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TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

TUNE IN THE TEXACO STAR THEATRE EVERY SUNDAY NIGHT—CBS ★ HELP WIN THE WAR BY RETURNING EMPTY DRUMS PROMPTLY

HOW TO INSPECT UP TO 25% MORE CLOTH WITH PERFECT FLUORESCENT ACCURACY

Courtesy of
Verney Mills,
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SPECIFICATIONS

Sold as a "complete package of light" with:

Eight 40-watt T-12 Fluorescent Lamps

Eight COP (Cut-Out-Premium) Fluorescent Starters

Sylvania Two-Lamp high-power-factor Auxiliaries

Finish: Inside, flat white. Outside, semi-gloss gray

Operating voltage: 110-125 volts, 60 cycle, AC

Dimensions: 52-1/16" x 40-3/8" x 11-13/16"

The new Sylvania T-1 Inspection Fixture—"fluorescent at its finest for textile inspection at its best"—now enables the textile mill to carry on inspection around the clock. And, what is more, do it more thoroughly, more easily, and in less time.

The mill for which Sylvania lighting engineers originally created this fluorescent application reports greatly improved Quality Control and estimates that each inspector's output was increased by as much as 25 per cent.

The T-1 was designed for use with a cloth inspection perch or other silhouette methods.

The fixture provides ample and well-diffused illumination of daylight quality permitting rapid and comfortable inspection of every square inch of cloth.

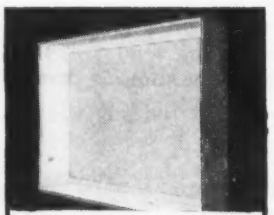
Eliminate worker fatigue and "returns" with an installation of Sylvania T-1 Inspection Fixtures—easy to install and operate. For further information, write to Sylvania Electric Products Inc., Dept. T.T., Boston Street, Salem, Mass.

LEADING MANUFACTURER OF FIXTURES IN THE FLUORESCENT FIELD

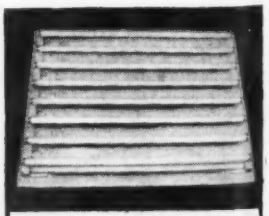
SYLVANIA ELECTRIC PRODUCTS INC.

SALEM, MASSACHUSETTS

SYLVANIA'S FLUORESCENT T-1 INSPECTION FIXTURE



Exterior of cabinet, showing how ceramic glass diffuses fluorescent light.



Back panel with eight fluorescent lamps, starters, and wiring channels.

FLUORESCENT LAMPS, FIXTURES AND ACCESSORIES, INCANDESCENT LAMPS, RADIO TUBES, CATHODE RAY TUBES, ELECTRONIC DEVICES

A SOLID STRUCTURE such as a motor shaft rarely fails from the inside out—it fails from the outside in. Moral: get rid of every surface tool mark or irregularity that might someday invite cleavage.

That's what Stan Brothers, above, of Allis-Chalmers Norwood Works is doing. As he painstakingly polishes the shaft—back and forth, back and forth—he works down to a finish that's slicker than silk.

Why does he follow his job so intently? Because in 17 years at Allis-Chalmers Stan has learned that he and every other employe has a *personal* stake in every motor.

He knows that when he helps build a *great* motor for you he helps make a *friend* . . . and that friends are something no company and its workers can have too many of.

Actually, it was friends that put Allis-Chalmers importantly in the motor business in the first place.

Years ago, Allis-Chalmers began building motors only because it wanted, to put on heavy-duty equipment it built, better motors than it could buy. Then a few of those motors were sold separately to one customer, a few to others . . .

And the reputation those motors earned—"You can depend on Allis-Chalmers Motors"—literally forced Allis-Chalmers into building electric motors in volume for the market!

So the very existence of Norwood Works is proof and reminder to every Allis-Chalmers coil winder, machinist, inspector, welder, brazer, painter, assembler—that *good work catches up with a company just as surely as bad work.*

That's why you can expect *good* work in every Allis-Chalmers motor! Allis-Chalmers, Milwaukee 1, Wis.

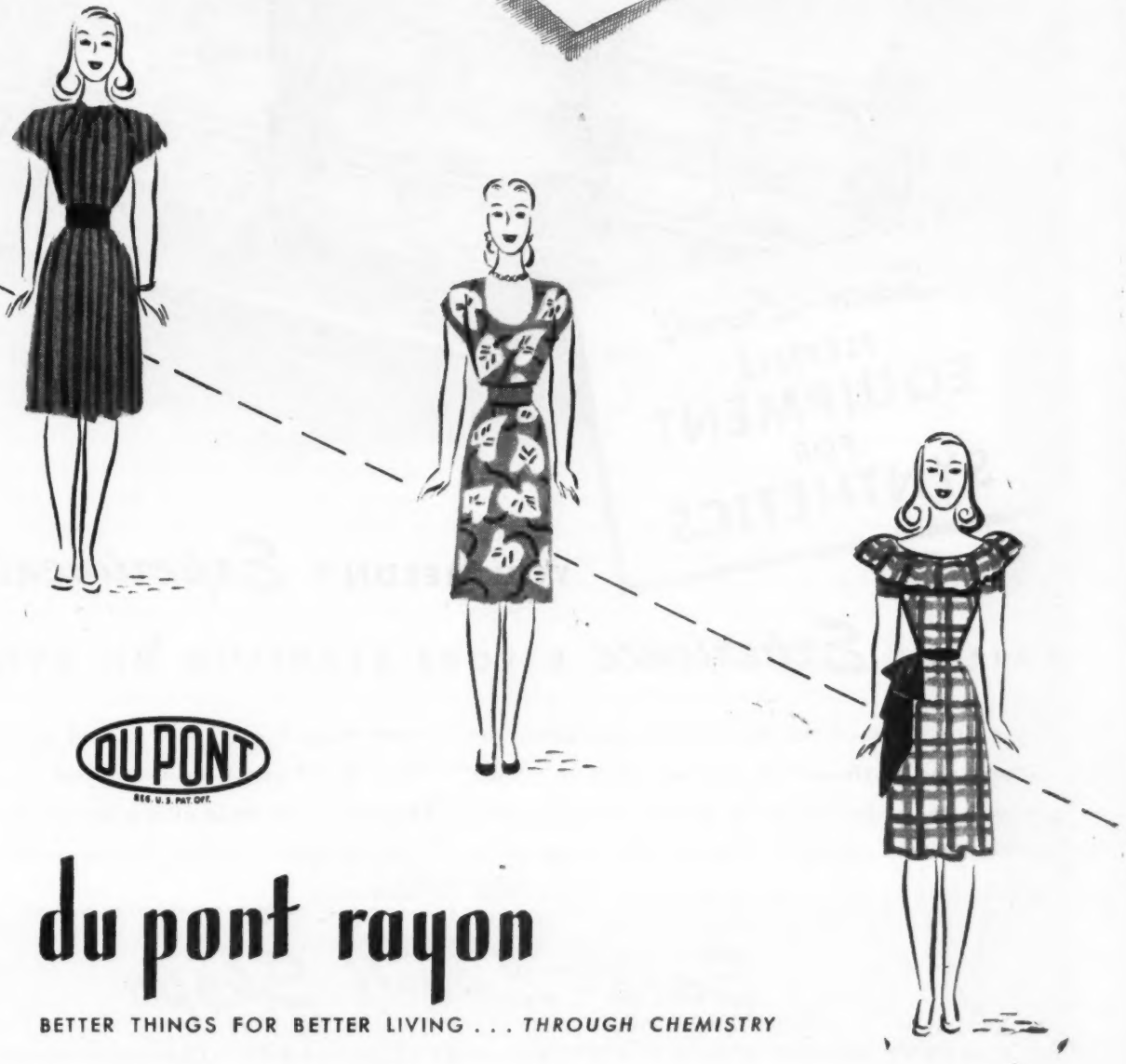
A 1728

YOU CAN DEPEND ON ALLIS-CHALMERS MOTORS

After you have poured time, talent, and integrity into the production of quality goods, you must make the public believe in their superiority. This is a big job in which the name Du Pont can be a big help. Add it to rayon identification and your quality story inherits a believing audience of millions. To women almost everywhere, the name Du Pont means the best that science can produce. ***Write for full information about Du Pont's simple, cost-free labeling program... Rayon Division, E. I. du Pont de Nemours & Co. (Inc.), Empire State Building, New York 1, New York.

Her Eyes are "Cordially Yours"

when goods are labeled



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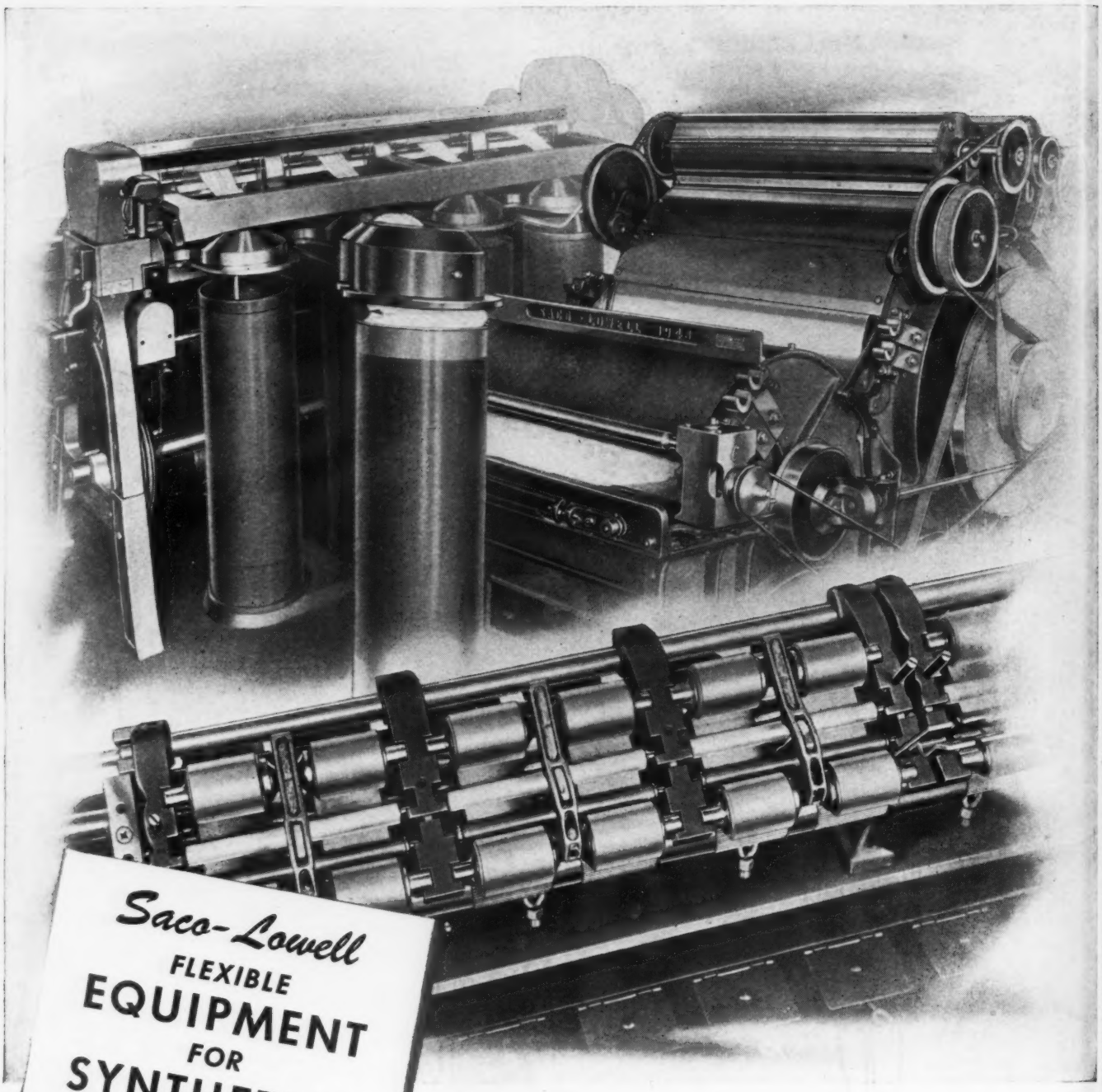
BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

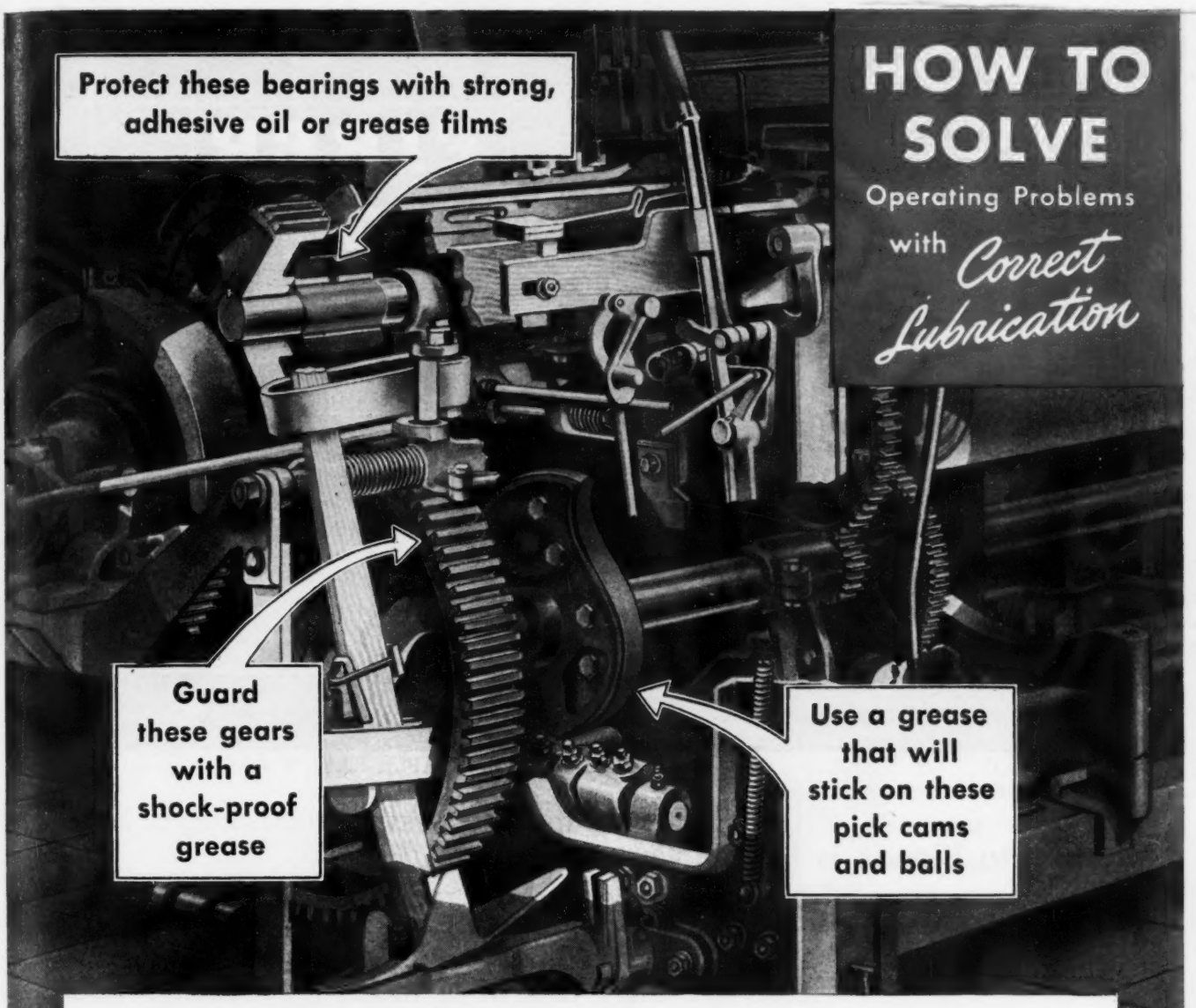


YOU NEEDN'T *Experiment* IF YOU CALL IN *Experience* BEFORE STARTING ON SYNTHETICS

These are some of the specialized machines developed and perfected by Saco-Lowell to blend, prepare and spin synthetic fibers. While manufacture of this equipment must wait until we're no longer busy with war production, the experience Saco-Lowell has gained in its development can be of great value to you in planning your future in the field of synthetics. If you will write, our engineers will be glad to share this experience with you.

Saco-Lowell Shops

60 BATTERYMARCH STREET, BOSTON, MASSACHUSETTS *Charlotte Greenville Atlanta*


Protect these bearings with strong, adhesive oil or grease films
HOW TO SOLVE
Operating Problems with Correct Lubrication
Guard these gears with a shock-proof grease
Use a grease that will stick on these pick cams and balls

Protect Looms against Shock Loads

BANG! BANG! BANG! BANG! Of all the machines of modern industry, your textile mill loom takes the prize for shock loads of all kinds.

That's why it's so important for efficient, economical operation to select lubricants that can stand up under terrific momentary pressures.

Over the years in many mills, Socony-Vacuum oils and greases have proved their shock-proof characteristics. Hence, they're recommended as the most practical loom lubricants you can buy.

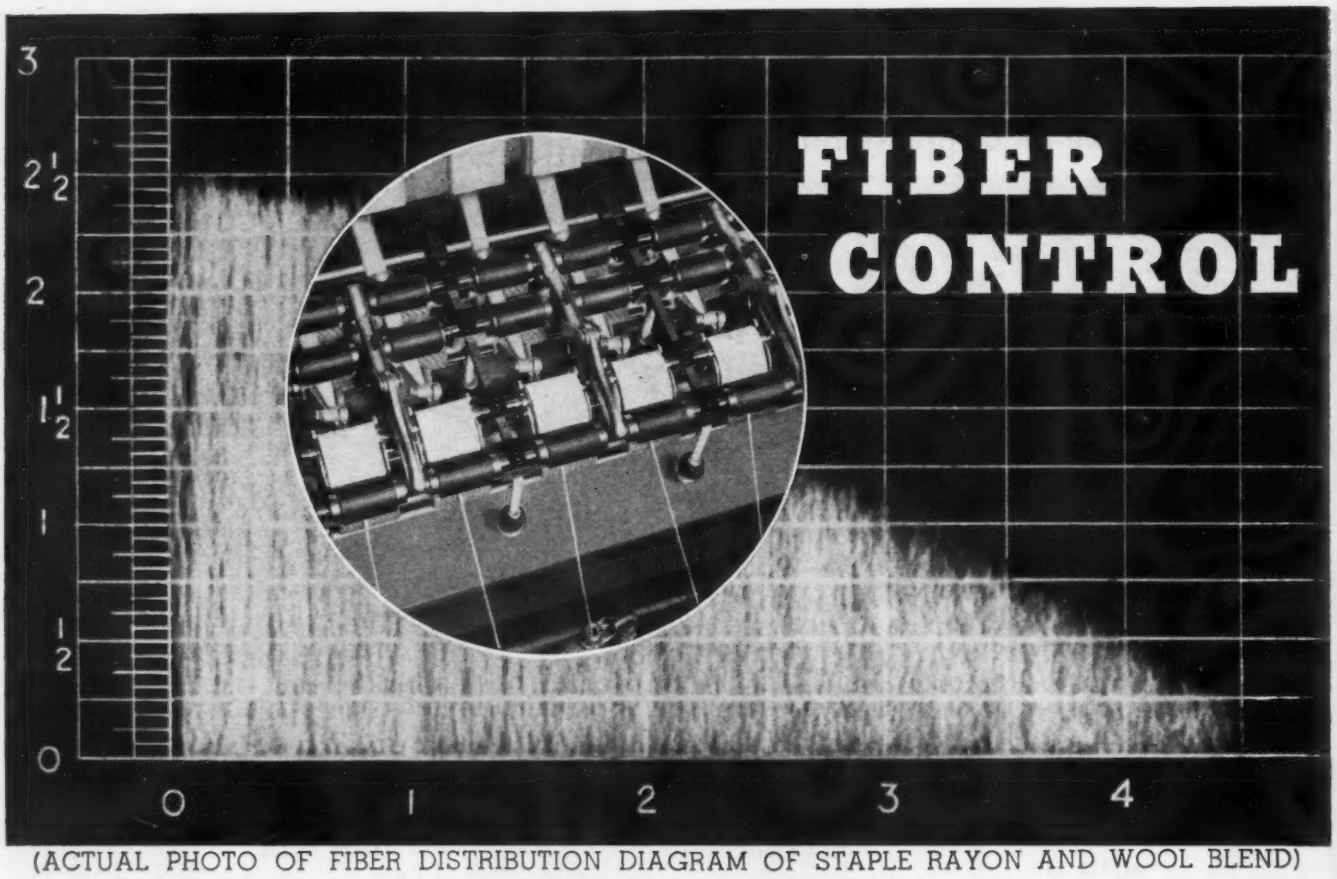
On cam, crankshaft and pick bearings, the strong films of Vactra Oils or AA Greases stick to the metal and resist rupture under crushing loads. Similarly, on gears, pick cams and pick balls, Mobilgreases resist the constant hammering, wiping, sliding actions, and thus protect the rubbing surfaces against wear.

Your looms turn out more cloth with lower maintenance and lubrication costs.

GARGOYLE Lubricants

SOCONY-VACUUM OIL CO., INC., Standard Oil of N.Y. Div. • White Star Div. • Lubrite Div. • Chicago Div. • White Eagle Div. • Wadhams Div. • Magnolia Petroleum Company • General Petroleum Corporation of California.

CALL IN SOCONY-VACUUM



(ACTUAL PHOTO OF FIBER DISTRIBUTION DIAGRAM OF STAPLE RAYON AND WOOL BLEND)

THE SECRET of the successful processing of Staple Rayon and Blends is "Fiber Control".

Textile men everywhere realize this and it accounts, in part, for the ready acceptance of Whitin Super-Draft Roving frames in this field.

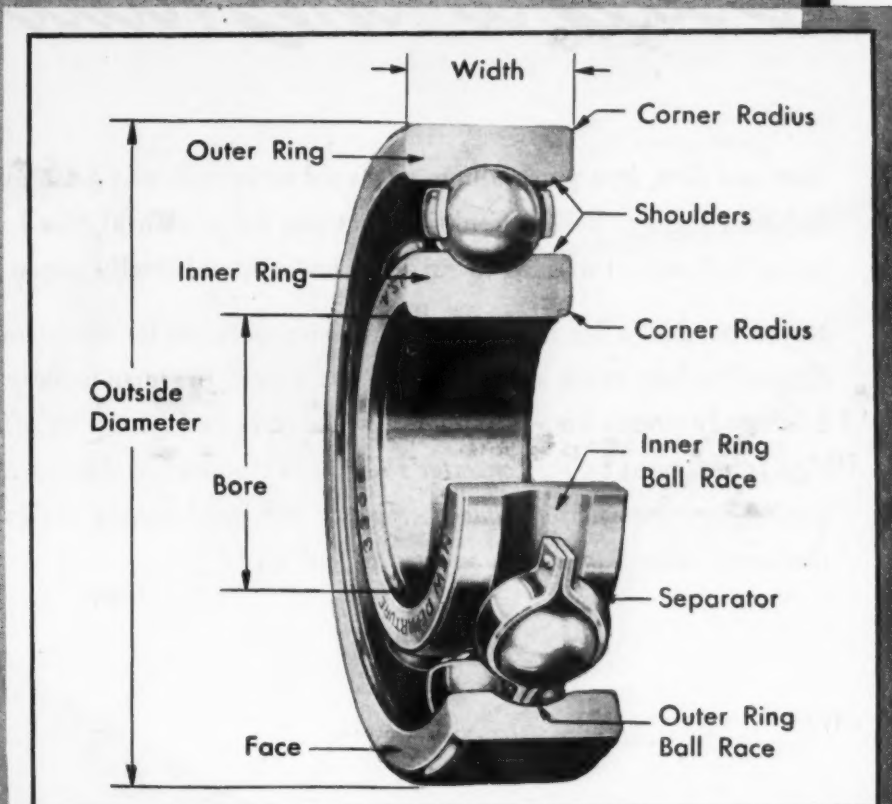
These are only a few of many excellent reasons why Super-Draft Roving has proven itself to be an ideal medium for the handling of this type of work.

1. **The gentle yielding action of the specially designed aprons keeps all fibers, regardless of length or type, under complete control while in the main drafting zone.**
2. **The use of Super-Draft reduces the number of processes required . . an important feature, since it is well known that rayon and its blends should be subjected to a minimum of handling in order to retain the natural resiliency of the fibers.**
3. **Super-Draft produces an even roving wherein the various fibers are uniformly distributed throughout the strand, resulting in even yarn and desirable fabrics.**

It is quite apparent that better blending on a reduced number of processes will result in important manufacturing economies. It will pay you to investigate Whitin Super-Draft Roving Frames.

WHITIN MACHINE WORKS
WHITINSVILLE, MASSACHUSETTS, U. S. A.
CHARLOTTE, N. C. **ATLANTA, GA.**

Ever wonder about the anatomy of a Ball Bearing?



The subject of the Ball Bearing is on everyone's lips nowadays, because of its immense importance to the prosecution of the war.

But how many know what a ball bearing is—what it does—why it is so indispensable?

A ball bearing is not merely a steel ball! It consists of the assembled mechanism illustrated.

It is used wherever shafts turn, to support loads, to permit higher, smoother speeds. Because nothing rolls like a ball, it reduces friction and wear and assures that the precise "location" of machine parts is maintained.

To those who would know more about this "tremendous trifle" we offer free an interesting 112 page book entitled, "Why Anti-Friction Bearings?"

nothing rolls like a ball

NEW DEPARTURE

BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT

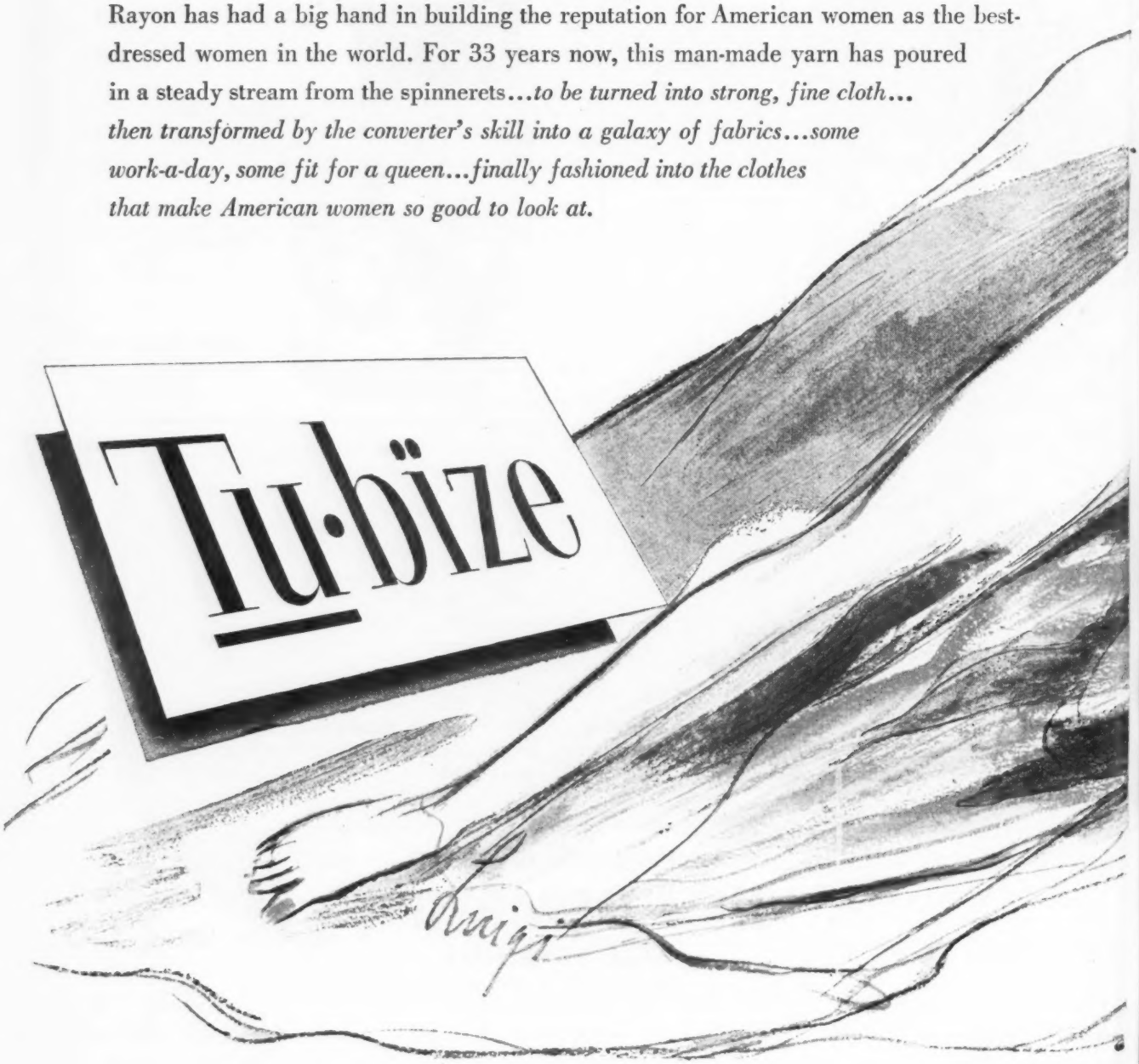
Sales Branches: DETROIT, G.M. Bldg., *Trinity 2-4700* • CHICAGO, 230 N. Michigan Ave., *State 5454* • LOS ANGELES, 5035 Gifford Ave., *Kimball 7161*

A VIEW OF THE PAST GIVES A

Clue to the Future

Now and then, in a plush album or an old news reel, you get a glimpse of yesterday's fashions. Hard to believe, isn't it? That was the pre-World War I era, when man-made rayon had not yet arrived to surprise, bedevil, and finally sweep Fashion off its feet!

Rayon has had a big hand in building the reputation for American women as the best-dressed women in the world. For 33 years now, this man-made yarn has poured in a steady stream from the spinnerets...*to be turned into strong, fine cloth... then transformed by the converter's skill into a galaxy of fabrics...some work-a-day, some fit for a queen...finally fashioned into the clothes that make American women so good to look at.*



And the best part is this: rayon lies within the reach of every pocketbook in the land!

At the beginning of the century, only the most visionary of textile men would have predicted the vast influence of rayon.

Today, any woman who has worn rayon can prophesy about its future. Rayon will go on becoming better, more beautiful, more wearable. In combination with other fibers, rayon will achieve new uses, new qualities yet undreamed of. And always, hand in hand with the development of rayon, goes our rising standard of living.

TUBIZE RAYON CORPORATION

Acetate and Viscose Rayon Yarns and Fabrics • 2 Park Avenue, New York 16, N. Y.

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N. Y.

Telephone: AShland 4-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

●

ESTABLISHED 1840

SANDOZ PRESENTS *the color achievement of the month*

Room Personality BY MOHAWK MILLS

As her house reflects *her* personality . . . so each individual room reflects, in style and decoration, the magic colors of Mohawk rugs.

We at Sandoz . . . proud to place at the service of the weaver our special ability to "think ahead with textiles" . . . pay tribute this month to Mohawk Mills, the peacetime creators of so much warmth and color in so many American homes.

In helping mills like Mohawk to satisfy the exacting demands of their own high standards, Sandoz research chemists have developed a number of distinctive dyes and auxiliaries.

Xylene Light Yellow 2G, for instance. This famous type was originated by Sandoz in 1908, and still is the yellow component of most acid combination shades on wool whenever superior light fastness is required.

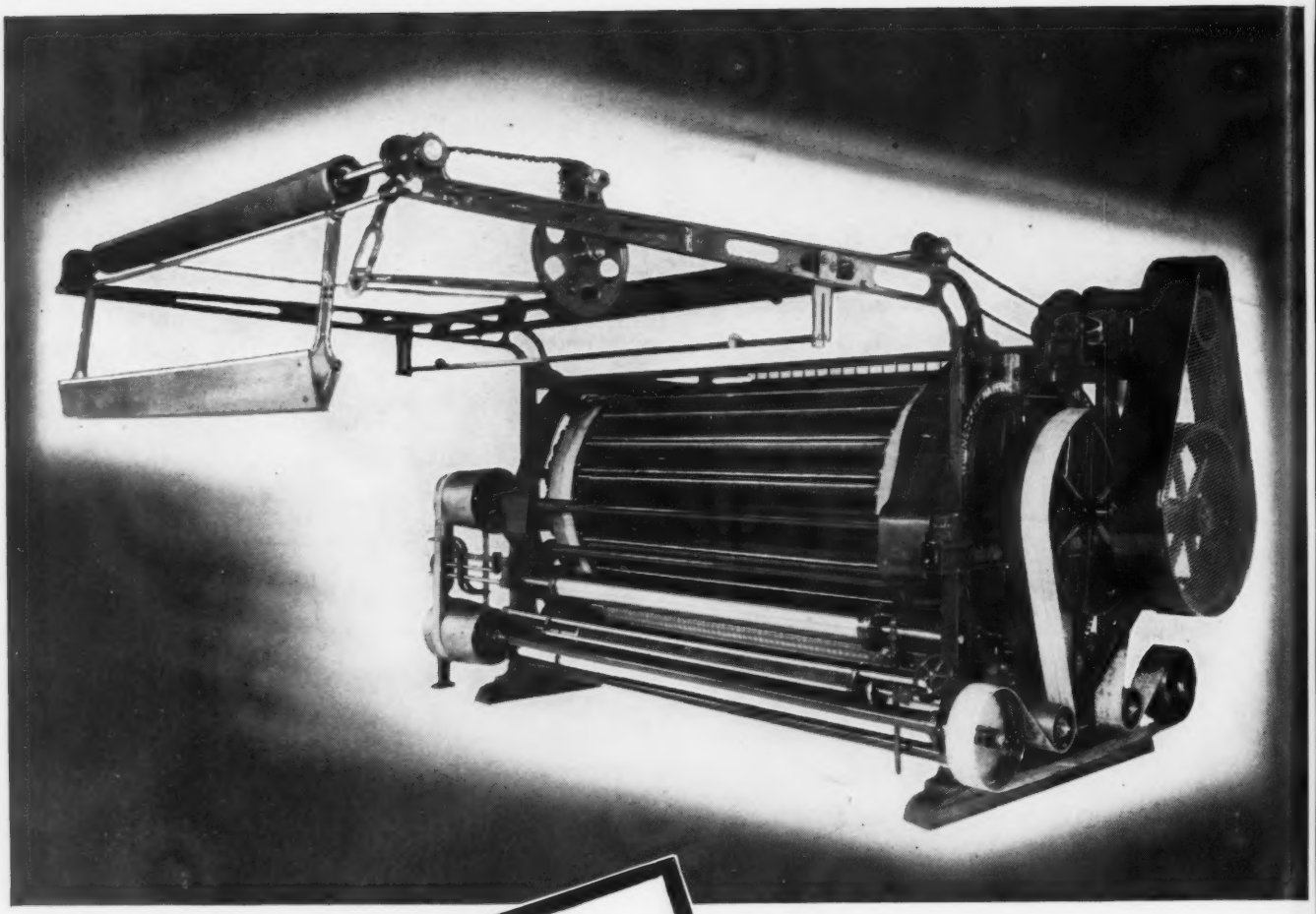
Other products of Sandoz research include Alizarine Light Blue 4GL Pat., now recognized as the fastest-to-light acid blue on the market . . . also Azo Rubinole 3GP Pat. and Alizarine Light Violet 2RC, outstanding members of a complete line of fast-to-light acid colors.

To expedite *your* order, Sandoz application laboratories are maintained in New York, Boston, Philadelphia, Charlotte, Los Angeles and Toronto. Stocks in those cities cover a wide range of acid, chrome and direct dyes for all natural and synthetic fibres. Other Sandoz branches: in Chicago, Paterson and Providence.

Watch for the next "Color Achievement of the Month" featuring the work of another Sandoz customer among leaders of the textile industry.

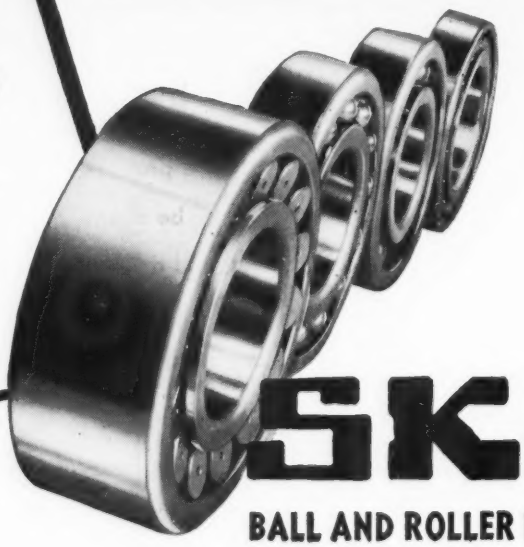
SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N. Y., U. S. A.

SANDOZ *thinks ahead with textiles* S SANDOZ



• *Built by* The Woonsocket Napping Mach'y Co.

Safeguarding shafts on Nappers



SKF

BALL AND ROLLER BEARINGS

Any textile manufacturer who operates this Double Action Ball Bearing Napping Machine is quick to recognize the many advantages of 92 SKF Ball Bearings.

On napper rolls, cone shafts, strippers and idler pulleys, the smooth, steady running of SKF's is synonymous with long life, correct alignment and freedom from shaft trouble.

On this machine—as on spinning and twisting frames, cleaners, Sanforizers, slashers and practically all other types of textile machines—SKF puts the right bearing in the right place—always. 5636

SKF INDUSTRIES, INC. • FRONT ST. & ERIE AVE. • PHILADELPHIA 34, PA.

WE HAVE AN OBJECTIVE, TOO!

Conversion from the frantic pace of wartime production to the tranquil ways of a world at peace will be another gigantic job. But it's one that must be done and done quickly when the time comes. For we must be ready for peace . . we must have jobs waiting for those boys who have been out there doing the biggest job of all for us!

That's one of the reasons why the WPB recently encouraged such planning and released materials for the development of new products.

This future-minded organization . . is still 100% engaged in war work. But it is already planning and perfecting Electronic control devices which may readily play an important part in *your* conversion plans.

★ BUY MORE THAN BEFORE . . . BONDS

TRADE-MARK REG. U.S. PAT. OFF.

MAGUIRE INDUSTRIES, INC.
ELECTRONICS division

Electronics will add to the comforts and conveniences of the home of the future, in the country as well as the city. Keep your eye on the Magic Eye. It's going places.

MAGUIRE INDUSTRIES, INC., GREENWICH • STAMFORD • BRIDGEPORT • NEW MILFORD • NEW YORK

G.I. NOW... but just wait

The Invasion is on!

Out of the sky float myriads of vari-colored supply parachutes, dropping food, ammunition, guns, all the sinews of war. And those parachutes are made of rayon—the very same rayon that might have gone into your linings and undies, dresses and gowns.

We at Industrial are proud that the quality of our famous "Continuous Process" Spun-lo Yarn—its uniformity, strength and knot-free characteristics—recommended it to Uncle Sam's technicians for such vital tasks. They're the very same characteristics that recommend it so highly for the products of peace. When peace comes, Spun-lo will be mustered out, and then, lovely fabrics for you—some familiar, some as yet, unborn!

*Reg. U. S. Pat. Off.

Industrial RAYON CORPORATION
MAKERS OF
Spun-lo RAYON YARN
BY THE Continuous Process

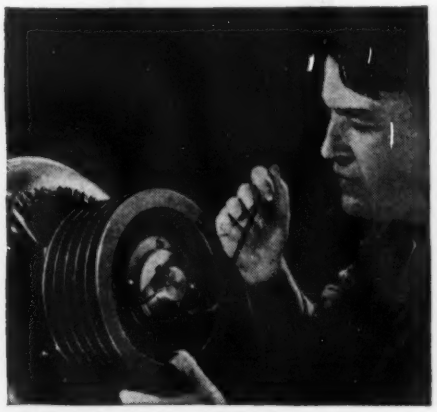
CLEVELAND, OHIO • NEW YORK OFFICE: 500 FIFTH AVENUE

This locks this to this in 1 quick operation

Allis-Chalmers' new "Magic-Grip" with tapered split bushing is put on, aligned, locked to shaft *as a unit* — making it the fastest mounting and demounting sheave on the market!

1 Place sheave on shaft. Slides on smoothly because clearance is provided by expanded bushing. There's *no* hammering — *no* forcing! Complete sheave and bushing unit comes intact—ready for quick, easy mounting.

2 Slide to desired position. Sliding easily, sheave can be placed *exactly* according to straight-edge . . . giving you true alignment with resulting smooth performance. A minimum of time is required.



3 Tighten three capscrews — and it's ready to go! Entire sheave is locked securely to shaft and *grips like magic!* No set screws to damage shaft. Send for Bulletin B6310. Allis-Chalmers, Milwaukee 1, Wis.

A 1757

Allis-Chalmers Texrope

"MAGIC-GRIP" SHEAVES

RAYON REPORTS

Published Monthly by American Viscose Corporation, New York, N. Y. SEPTEMBER, 1944

NEW "CROWN"* TESTED WASHABLE RAYONS HAVE "VITALIZED" CREASE RESISTANCE

WORKING WITH the American Viscose Corporation, the U. S. Finishing Company has successfully developed its exclusive Vitalized crease-resisting process for spun rayon fabrics dyed to CROWN Tested "Green Light" standards. The finish is being used on rayon fabrics for men's sportswear. They are the first of such fabrics to pass all the CROWN Tested requirements for washability and wearability . . . and to possess a crease-resistant finish. The fabrics come in a complete color range . . . black, navy, brown and wine as well as the pastel shades.

ANNUAL REPORT CHOSEN AS OUTSTANDING

The annual report of the American Viscose Corporation has been selected as the outstanding report in the textile industry. The decision was made by an independent board of experts, appointed by the magazine "Financial World," who selected the best annual reports of the year in each leading industry. Second best in the textile industry was the report of the Tubize Rayon Corporation.

Members of the judging board were Dr. Lewis Haney, chairman; Norman Bel Geddes, Raymond C. Mayer, Glenn Griswold and C. Norman Stabler.

DYEING SERVICE AVAILABLE TO "CROWN" TESTED LICENSEES

The Dyestuff Research Laboratory of the American Viscose Corporation is located in New York City, and its facilities are available to all converters and finishers who are CROWN Tested licensees. Dye formulas which simultaneously meet CROWN Tested standards and clients' color specifications may be obtained here. These formulas are scientifically accurate and thoroughly practical.

FABRIC HONORED BY ANNIVERSARY CELEBRATION

Salyna, a basic quality spun rayon fabric introduced by St. George Textiles ten years ago this year, has just been "honored" to celebrate this long span of service. In an industry built primarily upon the quick in-and-out changes of fashion, it is exceptional to see sound fabric merchandising maintained over so long a period.

Salyna, meeting the American Viscose Corporation's CROWN Test requirements for women's sportswear, stands not only on its own well-established quality reputation but carries this well-known service label to the public. It is a sportswear fabric of 80% spun rayon and 20% cotton, woven by J. P. Stevens, Inc. and dyed and finished by Glenlyon Print Works.

SECOND STAR AWARDED TO MARCUS HOOK

The Marcus Hook, Pa., plant of the American Viscose Corporation has been awarded a second star for its Army-Navy "E" flag. The plant is engaged in production of high-strength viscose rayon yarns for use in parachute and tire fabric.

NEW A.V.C. LEAFLET TELLS HOW TO REDUCE FUME FADING HAZARD IN STORAGE

In its new consumer leaflet on "Home Storage for Rayons," the American Viscose Corporation pays particular attention to the problem of fume fading of acetate rayons.

Since the problem is sometimes encountered when garments are stored, the leaflet advises women to "take special precautions in storing all fabrics containing acetate rayon." It then goes on with detailed suggestions on how to reduce the hazard of fume fading. Eventually, it is hoped that technical progress will completely eliminate fume fading. Meanwhile, the American Viscose Corporation feels that all interests will be best served by an intelligent meeting of the problem so long as it exists.

MAKE USE OF 4-PLY SERVICE

1 PRODUCT RESEARCH
Helps you get the right yarn or fiber.

2 FABRIC DEVELOPMENT
Helps you design new fabrics.

3 TEXTILE RESEARCH
Helps solve production and finishing problems.

4 "CROWN" TESTED
Helps provide scientific selling facts.

AMERICAN VISCOSE CORPORATION

Producer of
CROWN* *Rayon Yarns and Staple Fibers*

Sales Offices: 350 Fifth Avenue, N. Y. C. 1; Providence, R. I.; Charlotte, N. C.; Philadelphia, Pa.

Plants at: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

*Reg. U. S. Pat. Off.

PROTECT YOUR MACHINES

from Costly Hazard of

"LUBRI-CHAOS"

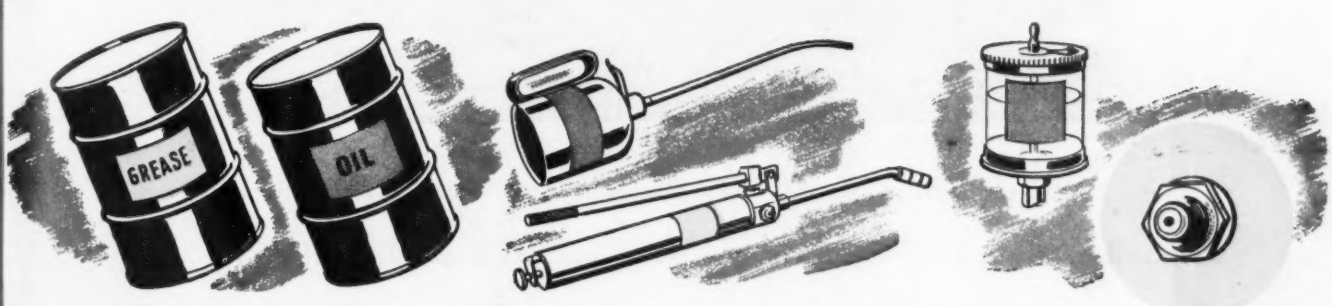
with the New, Super-Safe

ALEMITE

COLOROUTE

PLAN OF LUBRICATION

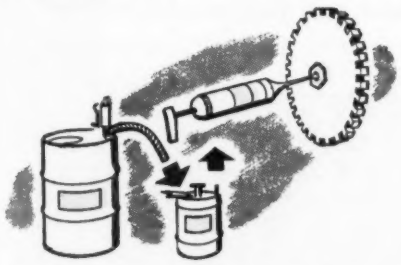
- **Coloroute** is a "super-safe" plan for directing the proper selection and correct application of both lubricants and oils to every type of machine.
- **Coloroute** was created to protect your machines from costly human error.
- **Coloroute** covers not one, but all phases of lubrication—the greases and oils, equipment and method of application.
- **Coloroute** is the natural outgrowth of Alemite's knowledge of lubrication gained through years of experience in every field.
- **No plant** is too large or too small to enjoy the economies and benefits of COLOROUTE.



1. When installing Coloroute, Alemite Lubrication Specialists analyze your lubrication requirements to determine the minimum number necessary to do an efficient job. Then each container is given a color identification. This method often results in reduction of 30 to 75% in lubricant inventories.

2. Then, an analysis is made of lubricating equipment requirements to ascertain the *minimum* equipment needed to do the job *right*. Each gun or oil can is color-identified so that the oiler can't mistake it. This helps prevent misapplication of lubricants and assures positive control of plant-wide lubricating schedules.

3. Each lubrication point is carefully checked and given its prescribed color identification. The color tells which "lube"—the shape of the symbol tells "how often." Because containers, equipment and lubrication points are color-keyed to each other, the most inexperienced help can be trained to be expert oilers in hours.



4. Finally, Alemite Lubrication Specialists prescribe and supply colored symbols and supervise their installation on every type of container, equipment and machine in your plant. The result is consistent, accurate routing of lubricants from " barrel to bearing." The right lubricant goes into the right place at the correct intervals of time from the proper lubricating equipment.

Write, Wire or Phone

for more Detailed Information on Coloroute

ALEMITE

First in Modern Lubrication

CONSULTATION • EQUIPMENT • LUBRICANTS

ENGINEERING • MAINTENANCE

1888 Diversey Parkway
Chicago 14, Illinois

Another Product of
STEWART WARNER

In Canada:
Belleville, Ontario

FABRIC OF
"Bemberg"
RAYON
THE MOST POPULAR NAME IN TEXTILES
. . . and because of this very popularity, we must, every now and then, remind our friends in the trade that the word, "BEMBERG", is our registered trade-mark.
We would appreciate it if copy-writers, editors, and authors generally, when using this name in print, would extend us the business courtesy of indicating, by any one of the accepted methods, that it is a trade-mark.
AMERICAN BEMBERG CORPORATION
261 FIFTH AVENUE, NEW YORK

Geon
Vinyl Resins & Plastics
Highly versatile synthetic materials offered for coating and finishing fabrics of
COTTON • LINEN • WOOL • RAYON • NYLON • GLASS

Characteristics which may be imparted to GEON treated fabrics in a wide variety of combinations:

Flexible
Waterproof
Spongeable
Lintless
Lightweight
Increased tensile strength
Reduced shrinkage
Easily embossed
Wide range of colors and luster
Easily applied by
Dipping
Spreading
Calendering
Can be heat-sealed

Resistant to

Acids
Alkalies
Chemicals
Oil
Foods
Perspiration
Creasing
Flame
Mildew
Moths
Odors
Sticking
Spots and stains
Light
Aging
Cold
Heat

THIS impressive list should suggest innumerable applications for GEON coated fabrics—ranging from tobacco pouches to draperies; from bowl covers to inflatable fishing boats.

Right now GEON is available to industrial users subject to allocation under General Preference Order M-10. However, limited quantities can be had for experiment—and our development staff and laboratory facilities are available to help you work out any special problems or applications. For more complete information, write Department H-2, Chemical Division, The B. F. Goodrich Company, Rose Building, E. 9th and Prospect, Cleveland 15, Ohio.

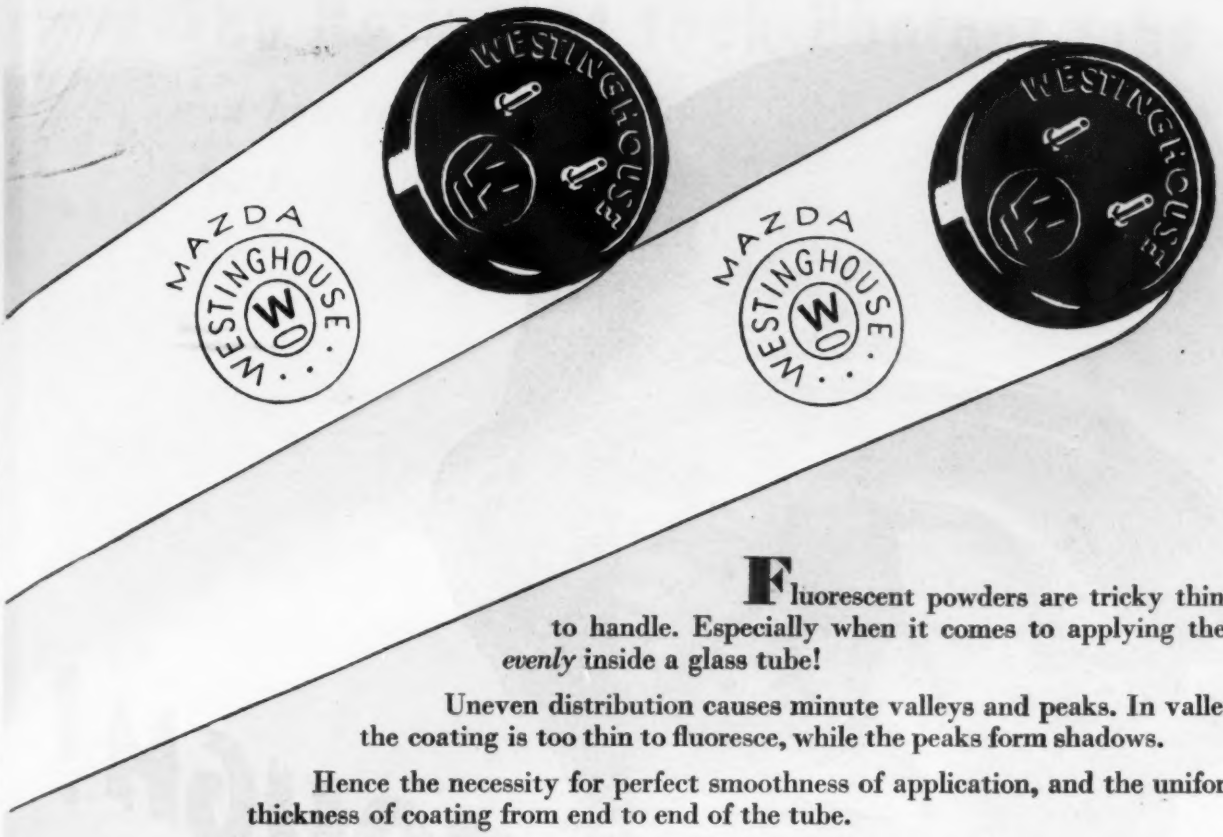
CHEMICAL DIVISION
THE B. F. GOODRICH COMPANY
Rose Building • E. Ninth & Prospect • Cleveland 15, Ohio

SMOOTHNESS *in the coating...*

means SEE-ABILITY

in the lamp

WESTINGHOUSE PRESENTS JOHN CHARLES THOMAS • SUNDAY 2:30 EWT., N.B.C.
TED MALONE • MONDAY, WEDNE DAY, FRIDAY 10:15 EWT., BLUE NETWORK



Fluorescent powders are tricky things to handle. Especially when it comes to applying them *evenly* inside a glass tube!

Uneven distribution causes minute valleys and peaks. In valleys the coating is too thin to fluoresce, while the peaks form shadows.

Hence the necessity for perfect smoothness of application, and the uniform thickness of coating from end to end of the tube.

Achieving this result is the aim of every step in the exacting Westinghouse procedure. From processing of raw materials to the final mixing of the phosphor powder, Westinghouse methods are concentrated on making and keeping the fluorescent powder uniformly *smooth*.

Carefully controlled schedules of grinding, acid washing, firing and ball milling insure uniformity. This extra care and attention counts . . . keeps Westinghouse fluorescent lamps *bright from end to end*.

And that's why, when you order fluorescent lamps, it pays to ask for Westinghouse. Your Westinghouse dealer can supply you right now for essential war lighting . . . and also to a limited extent for essential civilian use. Westinghouse Electric & Manufacturing Co., Bloomfield, New Jersey.

HELP SHORTEN THE WAR . . . BUY MORE BONDS THAN BEFORE!

TOUGH!

Like the hardboiled top-kick...

SUPER-NARCO* is tough to the core. Underneath the smooth, sleek surface of this super rayon yarn by North American, is a steel-like strength and resistance to heat, friction, stress, and strain. Today, **SUPER-NARCO** is used exclusively in fabrics that must stand the wartime pace... either on the battlefield or the production front. Tomorrow, it will mean better things in textiles for everybody.

*Reg. U. S. Pat. Off.

North American

RAYON CORPORATION
261 FIFTH AVENUE, NEW YORK

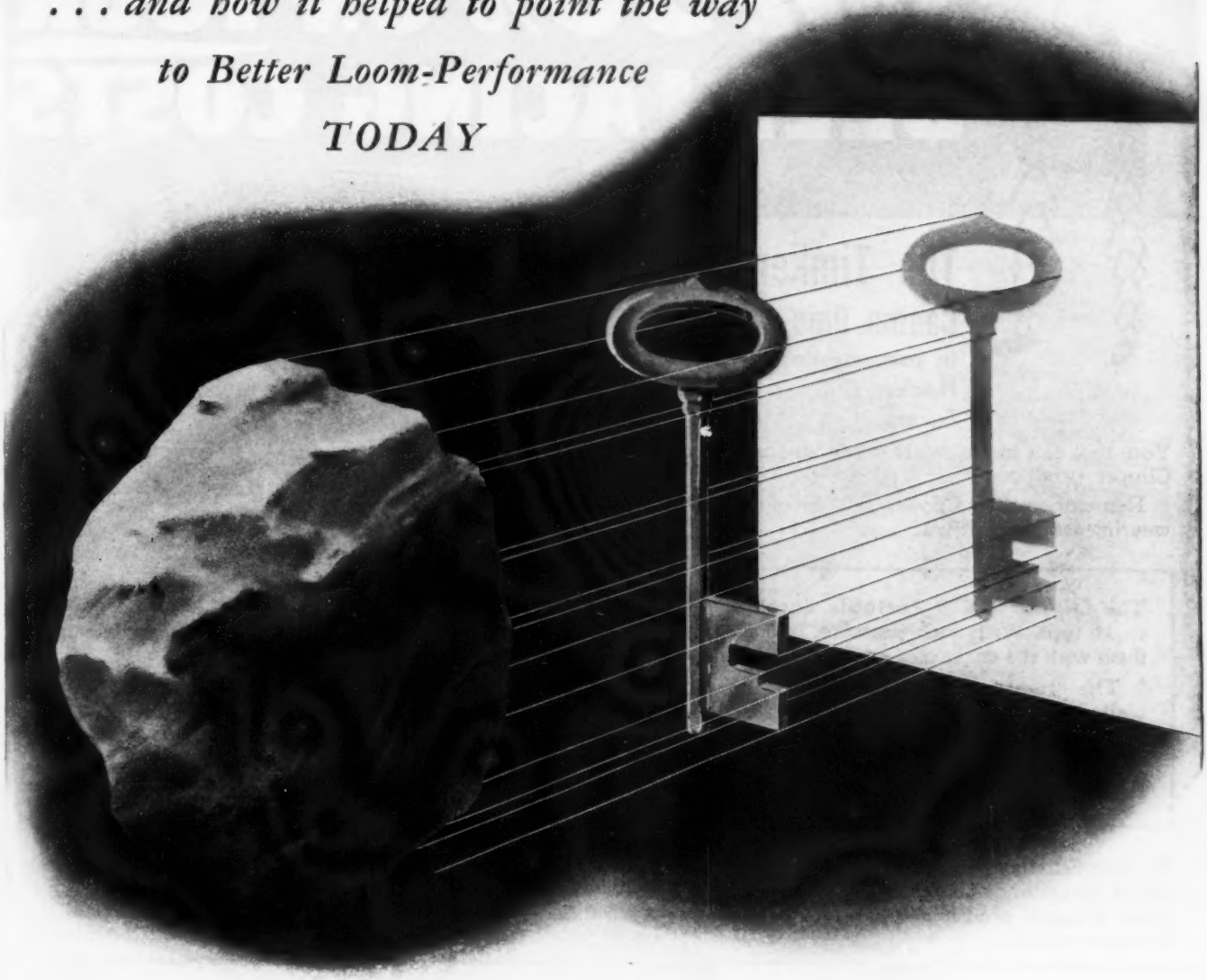
Plant — Elizabethton, Tennessee

The Rock that took Photographs

. . . and how it helped to point the way

to Better Loom-Performance

TODAY



LESS than 50 years ago a French scientist found on opening a long-shut cabinet drawer, that a metal key had had its photograph taken while it lay imprisoned in darkness. In that drawer, at the time, was a rock containing uranium salts. Apparently it had something to do with the mysterious image. Later experiments proved that this rock could be used to photograph the face of a medal. And so started the laborious research that ended in the discovery of *radium.*

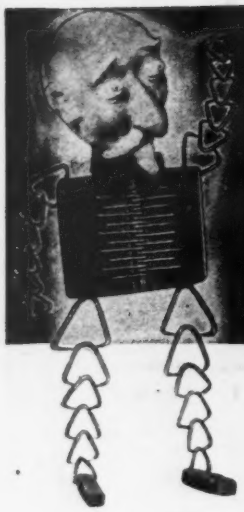
Today, radium is one of the mediums used in the C & K testing laboratory which has rapidly grown, during the war years, to be one of the most complete and comprehensive units of its kind in any industry. Here, C & K keeps its own supply of this fabulously expensive element, which is used in testing steel, foundry castings, and finished parts. The process is known as Gamma-Ray Radiography . . . one of the most reliable methods of revealing otherwise invisible defects or irregularities in metal.

C & K's radiographic pictures are used in three ways: As guides toward improvements in design . . . as production expediters . . . as deeply reliable inspectors both of raw and finished materials. And, in addition to radiography, many other modern inspection techniques are expertly applied in this modern metallurgical clinic . . . sound assurance to you that C & K loom parts shall benefit from the use of the most modern techniques.

Crompton & Knowles Loom Works

WORCESTER 1, MASSACHUSETTS, U. S. A.
PHILADELPHIA, PA. • CHARLOTTE, N. C. • ALLENTOWN, PA.

between Today's War Weapons . . and their New Uses in Tomorrow's Looms



SAVE 30% ON YOUR BELT LACING COSTS

The Timken Roller Bearing Co. of Canton, Ohio, has effected a saving of about 30% in consumption of belt hooks by using Clipper Belt Hooks, Clipper Lubrihide Pins and Clipper Speed Lacers.

You, too, can make worth-while savings by using ALL THREE Clipper products.

Remember, only Clipper Belt Hooks are packed with the long wearing **Lubrihide Pins.**

Clipper No. 9 Portable laces belts up to 6 inches wide in one quick, easy operation.

The **Clipper No. 9 Portable Lacer** develops pressures up to 16 tons. With such pressure, hook legs can be embedded flush with the surface of any kind of belt and points clinched.

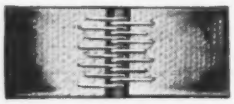
The scientific action of the jaws forms a perfect line of well rounded loops permitting the use of maximum diameter **Lubrihide Pin,** also providing equal distribution of pulling strain on every hook. A belt joint so made will outlast by two to three times one made with an old-style portable lacer.

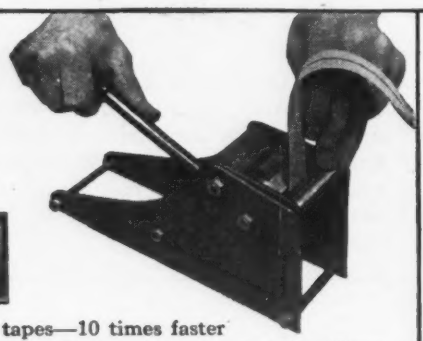
Scientific action of Jaws forms

a perfect loop for connecting pins.

We suggest that you check YOUR belt lacing situation. Send for folder describing the powerful Clipper No. 9 Portable Lacer and other Clipper products. Phone your Mill Supply Jobber for a demonstration!

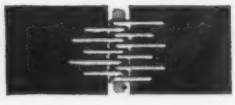
CLIPPER SPINDLE TAPE LACING EQUIPMENT

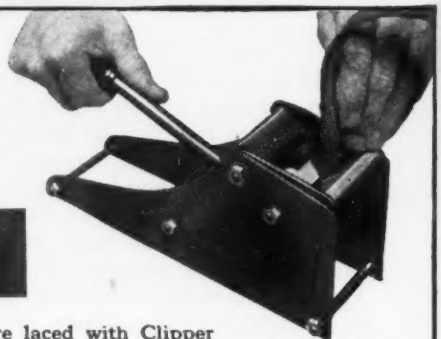




You can lace spindle tapes—10 times faster than stitching — with Clipper No. 25 Spindle Tape Hooks. The spinning frame is shut down only long enough to place the new tape on the pulleys and join the ends with the connecting pin — a short, easy operation. Tapes run true—last longer—run smoother—require less tension. VIBRATION is ELIMINATED.

CLIPPER CONDENSER TAPE LACING EQUIPMENT





Condenser tapes are laced with Clipper No. 25 Condenser Tape Hooks. The joint is as flexible as the tape itself. Clipper Laced Condenser Tapes can be installed in a fraction of the time required for endless tapes. Tape may be purchased in the roll at considerable saving, and cut to length. WRITE FOR INFORMATION.

CLIPPER BELT LACER COMPANY GRAND RAPIDS, MICHIGAN, U. S. A.

... right at your finger tips!

Accurate, Authentic, Genuine Saco-Lowell Repair Parts Data . . . invaluable facts for your Maintenance Foremen and Mechanics

These catalogs contain the complete list of genuine Repair Parts for Saco-Lowell equipment. They are fully illustrated with numbered diagrams and instructions for ordering. To eliminate unnecessary delays, inconvenience and expense when ordering supplies, your Purchasing Department, Store Keepers and Overseers should have a set of these catalogs handy. Check over the list at the right and order as many sets as you need to cover all the Saco-Lowell equipment you have in operation. We'll send them to you promptly.

Saco-Lowell Shops

60 BATTERYMARCH STREET, BOSTON, MASSACHUSETTS

Charlotte ***Greenville*** ***Atlanta***

Please check the catalogs you require

- Openers ☐
- Distributors ☐
- Feeders ☐
- Dust and Waste Extractor ☐
- One Process Pickers & Blending Reserves ☐
- Blending Reserves ☐
- Revolving Flat Card ☐
- Drawing Frames ☐
- Sliver Lap Winder ☐
- Derby Doublers (20" x 22½" Lap Winder) ☐
- Comber ☐
- Roving Frames
  - Size 12" x 6" — 11" x 5½" ☐
  - Size 10" x 5" — 9" x 4½" ☐
  - Size 8" x 4" — 7" x 3½" ☐
- Spinning Frame *Model 38* ☐
- Spinning Frame *Older Model* ☐
- Twisters ☐
- Warpers ☐
- Slashers ☐
- Waste Machines ☐

AT

Gentlemen:

Please send catalogs checked above to the following individuals:

Date_____

NAME_____ POSITION_____

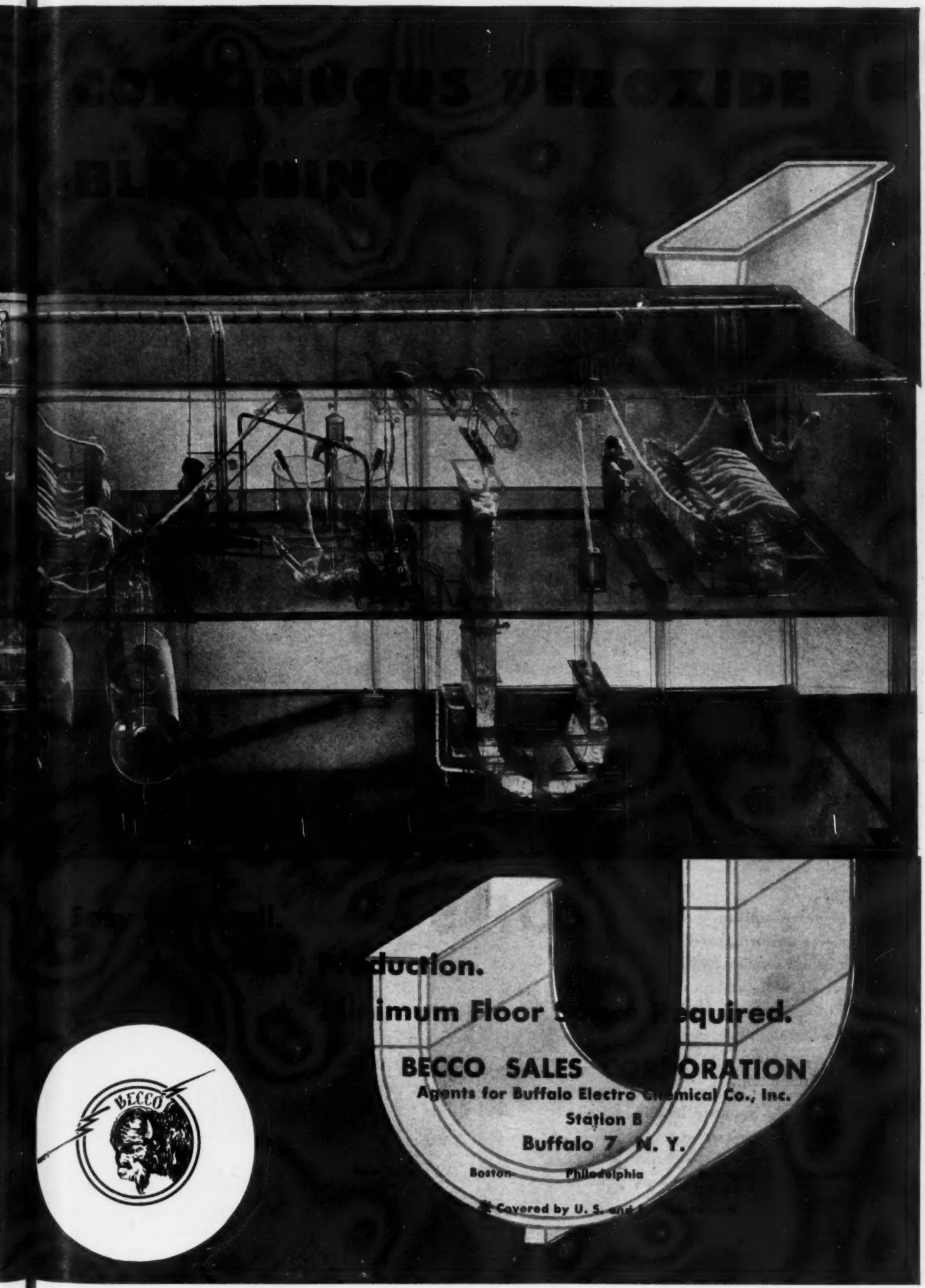
NAME_____ POSITION_____

NAME_____ POSITION_____

Request sent by_____ POSITION_____

COMPANY_____ ADDRESS_____

BIGG
★ DESIGNED To Meet YOUR Requirements For ALL
Types of Fabrics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ORATION
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BECCO

HYDROSULFITE

OF SODA CONC.

• In war or peace—military or civilian fabrics—it's uniform, predictable *results* that count. That's why the consistent high strength and purity of Jacques Wolf Hydrosulfite of Soda Conc. are so highly approved by the country's leading plants for vat dyeing and color reduction.

It's *economical*—because less is needed and longer runs can be made without further addition. There's *less dusting*—granular uniformity keeps dusting to a minimum—less waste, easier handling. It has *high stability*—assured by careful laboratory control during every step of manufacture.

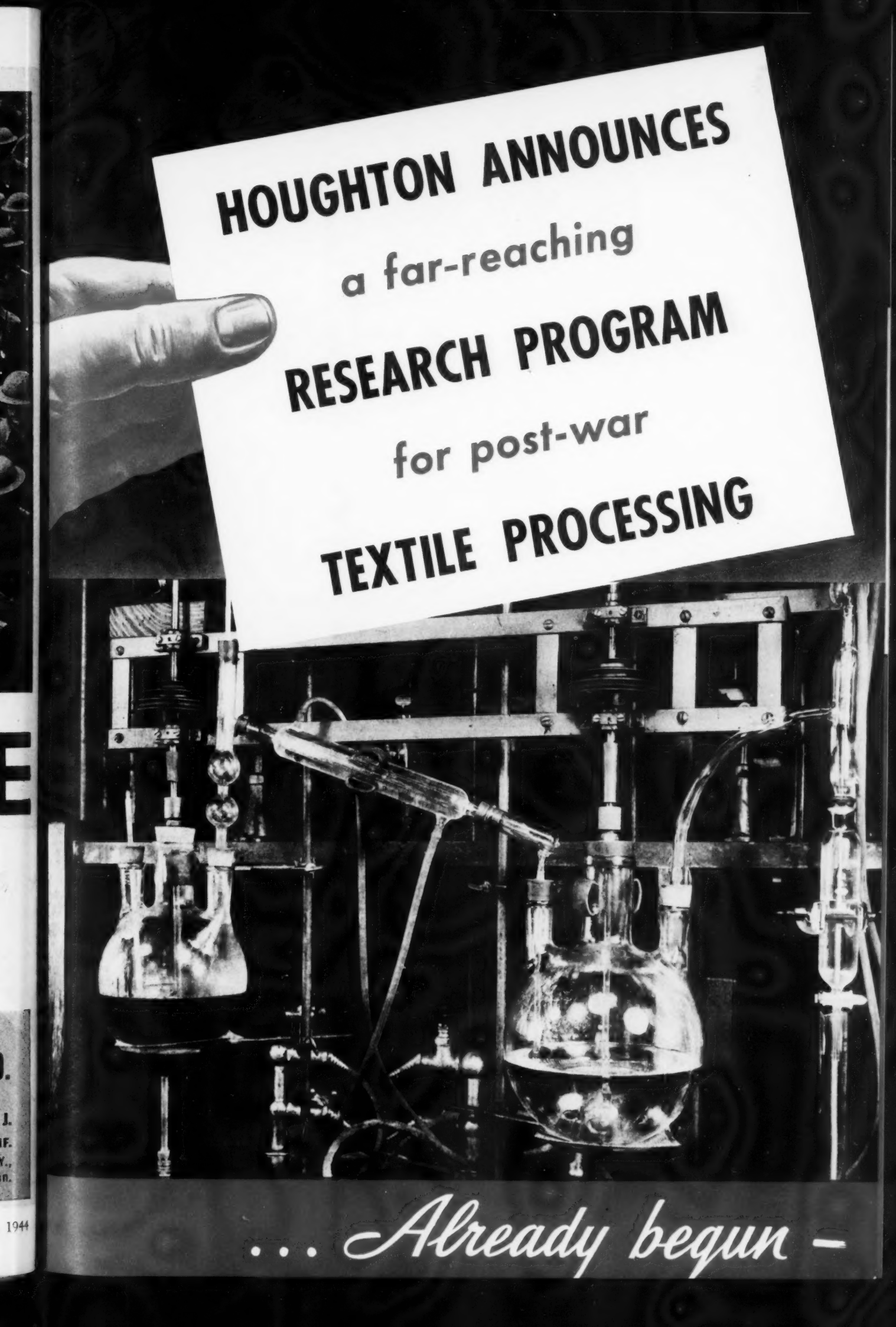
WOLF BRAND PRODUCTS

JACQUES WOLF & CO.

Chemicals PASSAIC, N. J.

OTHER PLANTS: CARLSTADT, N. J. • LOS ANGELES, CALIF.

WAREHOUSES: Providence, R. I., Philadelphia, Pa., Utica, N. Y., Chicago, Ill., Greenville, S. C., Chattanooga, Knoxville, Tenn.


HOUGHTON ANNOUNCES
a far-reaching
RESEARCH PROGRAM
for post-war
TEXTILE PROCESSING
... Already begun –

The world of tomorrow will be an era of chemistry. Already time-honored staple oils formerly used to prepare textile fibers for weaving and knitting have been replaced by synthetic products which actually do a <u>better</u> job. And this is only the beginning! The name of E. F. Houghton & Co. is by no means new in textile processing. Even before war scarcities made traditional favorites hard to get, this company earned a reputation for its ability to produce synthetic materials to replace staples. Although still at full speed on war production, we are making ambitious plans for the post-war era. Here are a few of the new things to come:

PLANS...the better

#1 INCREASED LABORATORY FACILITIES

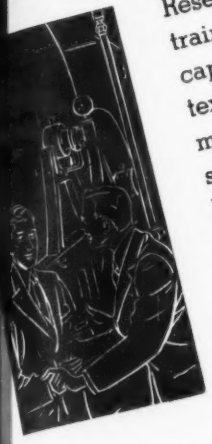
A sizable addition is now being built to our already spacious Textile Laboratories. This will house the most modern of laboratory equipment for product development and will enable both original research and pre-testing of new textile products. Manufacture on a practical production scale is assured by making plant batches of the new products are field-

NEW-ERA OILS AND CHEMICALS

to serve you...

#2

AUGMENTED STAFF



Research projects require men—trained organic chemists who are capable of developing products for textile processing. Houghton has measurably increased its textile research staff in recent months, and has added practical field men of mill experience. By this added manpower new ideas may be translated into practical, proven benefits to be demonstrated to mills throughout the entire United States.

#3

CONFIDENTIAL SERVICE

We take pride not only in our personalized mill service on such processes as sizing, scouring, etc., but also in our ability to keep faith with those who seek that service. Each mill problem is treated confidentially. A report made to a concern at its request is its own property, not broadcast to others. You can safely place your processing problems in our hands, confident that we will report to you . . . and to you alone.

#4

ALREADY UNDER WAY

Not all development work is in the distant future. Each day, each month, brings forth new ideas. Research is a never-ending task, including many projects started years ago, which are only now beginning to bear fruit. Familiar to many are these product groupings on which we are establishing a reputation:

NEW FINISHES • NEW SOFTENERS • NEW SURFACE ACTIVE AGENTS • NEW REPELLENTS • NEW SIZES

What's your problem? Write . . .

E. F. HOUGHTON & CO.

303 W. LEHIGH AVENUE
PHILADELPHIA

1305 W. MOREHEAD ST.
CHARLOTTE

Offices in all principal cities

...LSOR TEXTILES...

SOME RESULTS OF *Yesterday's research...*

AVAILABLE TODAY

WETTING AGENTS

The Surfax line of surface-active agents for rapid wetting out, penetration and softening. Oil-type products possessing fast wetting speed at low concentrations. Valuable also for sanforizing where wetting back is a necessary requisite.

DETERGENTS

N-25-C, N-100 and Cerfak—effective scouring and wetting agents, replacing soap, and used for Kier boiling, open boiling, laundering, scouring—a wide range of textile applications. These products provide high sudsing action, excellent detergency at all temperatures.

RAYON OILS

Raylubrics for soaking, softening, throwing and finishing acetate and rayon. These products include soluble oils, neat oils and blends for all applications. They assure stability and freedom from rancidity or discoloration of the yarn.

RAYON SIZES

Houghto-Size "B"—a highly concentrated compound for sizing rayon and acetate filament warps. Not tacky or gummy; easily boiled out; leaves fabric with proper softness and "handle." Superior to a gelatin-type size.

COTTON WARP SIZES

The Houghto-Size line of warp size compounds, giving the advantages of low kettle cost, high breaking strength, simplicity of formula, elasticity of sized yarn, ready weavability, low moisture content and high weave room efficiency. Backed up by a Size Check-up service that helps mill men evaluate their own sizing practice.

COTTON SOFTENERS

Sol-Lustres—clear, amber-colored, soluble oils, free from insoluble matter, high in stability. Used as dye bath levelers and as softening and finishing oils for all types of woven and knitted cotton fabrics. These softening oils penetrate faster, wet out better, than ordinary sulphonated oils.

WOOLEN & WORSTED OILS

Lanolubrics, E. Z. Scours, Worsted Oils and Sulfols for conditioning fibers. Odorless, non-oxidizing, non-staining, easily scoured, readily soluble.

• • •

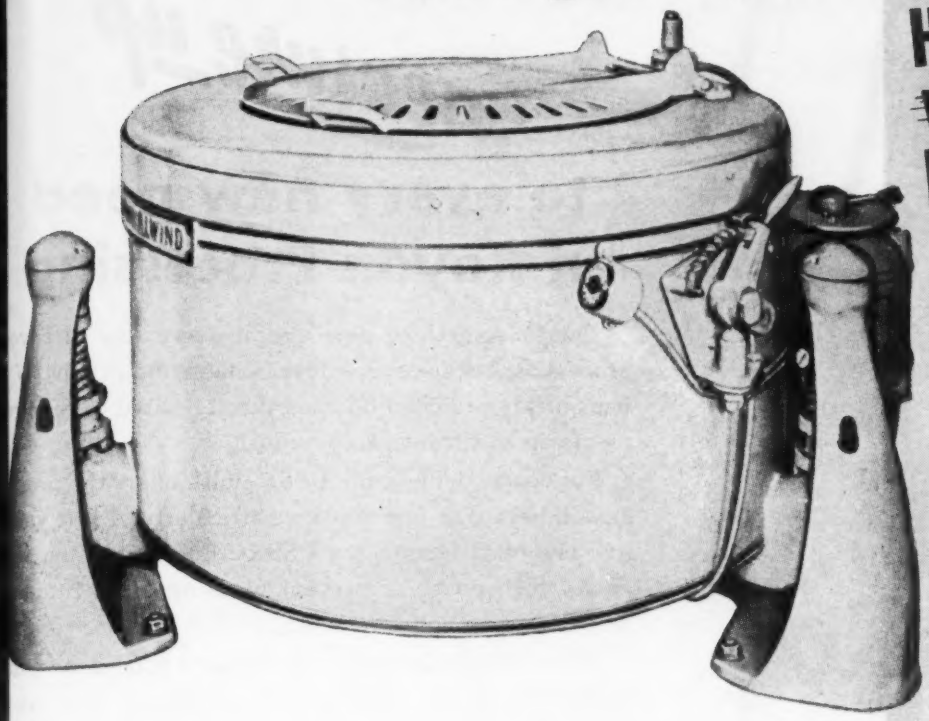
All Houghton textile processing products are backed up by "shirt-sleeved" research, extending from lab to mill where practical proof can be given of their ultimate economy and excellent money value. Ask the Houghton Man who calls on you.

E. F. HOUGHTON & CO.

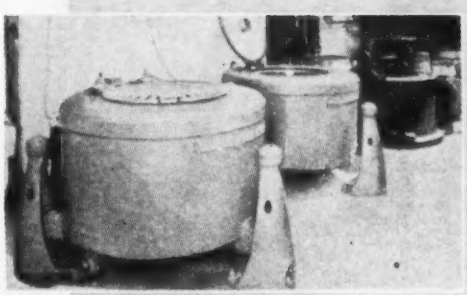
PHILADELPHIA 33, PENNA.

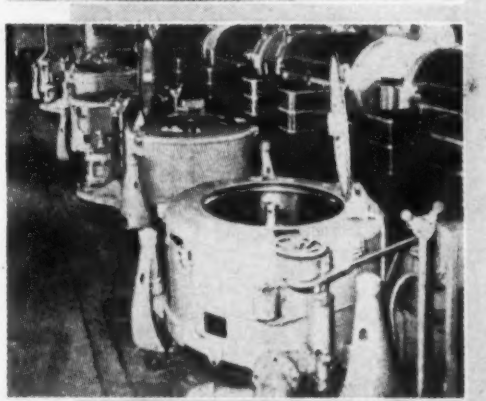
CHICAGO • CHARLOTTE • DETROIT • SAN FRANCISCO

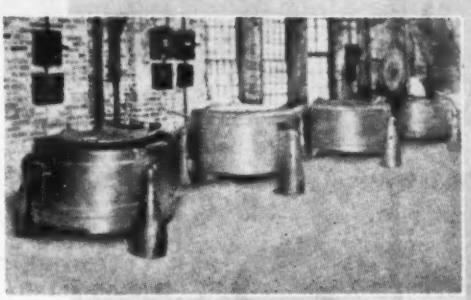
A Fast Worker— and a good one



THE FLETCHER HIGH-SPEED ~~WHIRLWIND~~ EXTRACTOR







You'll get *extra* speed five ways in the Fletcher High-Speed "Whirlwind" Extractor:

1. Loading time is shortened by Fletcher's convenient design.
2. Acceleration is smooth and extra fast, so the Fletcher reaches its maximum speed in the shortest possible time.
3. Actual running time has been cut to almost one-half that usually required, because the Fletcher High-Speed "Whirlwind" is *designed and constructed to give you this extra high speed—1000 RPM with 48" basket.*
4. The Fletcher comes to a stop in less time than usual, thanks to the automatic hydraulic brake, and finger-tip control.
5. Unloading is easier and consequently faster.

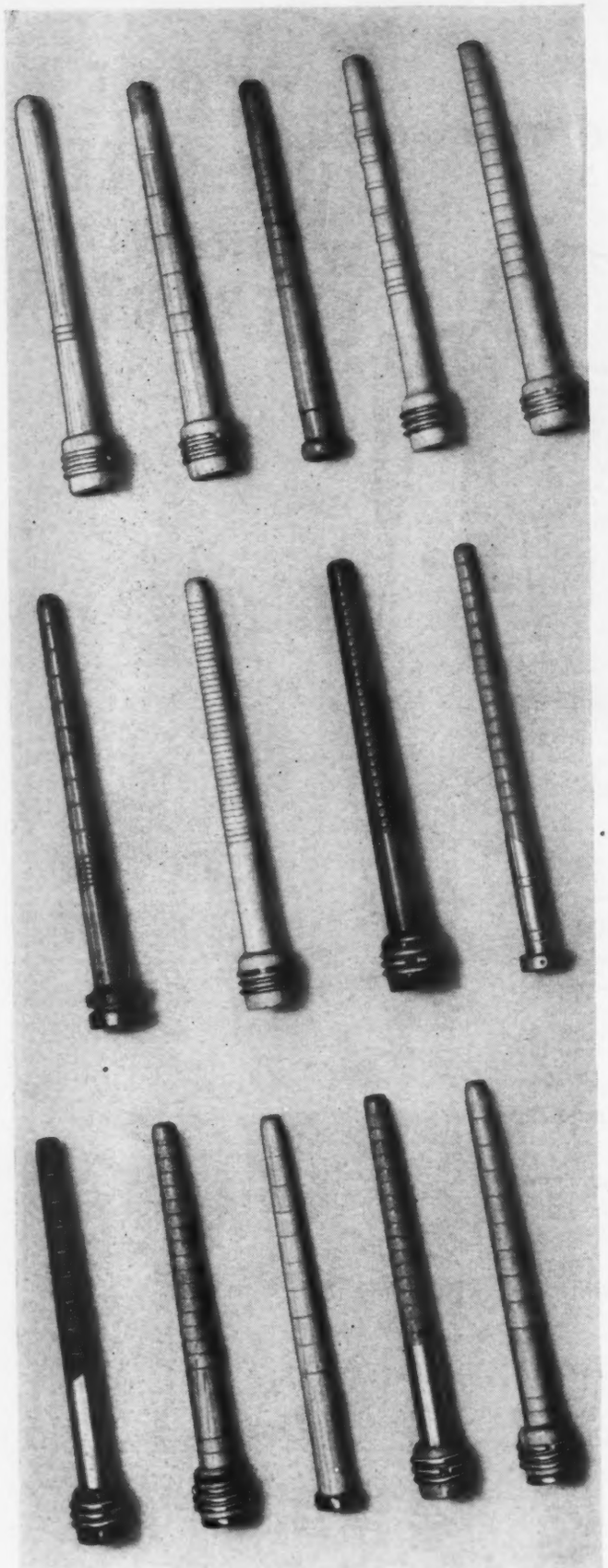
Safety, stability, smoothness—all three are assured by Fletcher design and construction.

FEWER EXTRACTORS—BETTER EXTRACTION

What all these factors add up to, of course, is that you can get more thorough extraction faster from a Fletcher High-Speed "Whirlwind," and consequently you'll need fewer extractors to get out your war-essential work on time.

FOR THE ANSWERS TO YOUR QUESTIONS on the present and post-war installations of extractors, narrow fabric looms, throwing machines and spindles, keep in touch with Fletcher—there's no obligation.

FLETCHER WORKS GLENWOOD AVE. & SECOND ST., PHILA. 40, PA.



U S BOBBINS *measure up* to every new need in Rayon Processing

There's something new almost every day in rayon processing, but for every development, old or new, U S has quickly provided bobbins exactly suited to requirements, in size, contour, and finish.

For coarse deniers, the USSR finish offers the proper smoothness. For fine deniers, particularly of soft yarns like low twist acetate, the USSRC finish gives the necessary high polish to prevent filaments from catching while winding and unwinding.

When filling yarns are to be Hygrolit conditioned, the USSR finish has the required durability. For intermediate conditioning, up to 150°, the US150 finish is recommended. For heavy conditioning in steam at temperatures up to 200°, bobbins with the U S transparent enamel finish, fitted with rust-resisting rings and brass bushings, will stand up with complete satisfaction.

U S Bobbins also withstand the warping effect of conditioning heat and moisture because they are made from straight grain *split stock,* scientifically seasoned for maximum strength.

Tell a U S representative your requirements, and he'll help you select U S equipment that will lower your costs and improve performance, whether you need Bobbins, Cones, Rolls, Shuttles, Spools, or Tubes.

Four Reasons Why it Pays to Consult U S

MILL-WISE REPRESENTATIVES U S representatives cover every field of textile production, and can offer thoroughly experienced advice on the use of U S products in any process.

CONTROLLED RAW MATERIALS Extensive U S owned timber properties allow close control of raw material selection and processing from the source.

AMPLE PLANT CAPACITY Five manufacturing plants, in North and South locations closely keyed to textile production areas, are fully equipped to handle any size orders.

PRECISION STANDARDS U S has cooperated with textile machinery manufacturers for 86 years—can meet the closest possible limits of tolerance in all tests for dimensions, weight, and balance.

U S BOBBIN & SHUTTLE CO.

PROVIDENCE, R. I.
GREENVILLE, S. C.
CHICAGO AGENT:
Albert R. Breen,
20 E. Jackson Blvd.

LAWRENCE, MASS.
CANADIAN AGENT:
W. J. Westaway
Montreal, Que. — Hamilton, Ont.

JOHNSON CITY, TENN.
CHARLOTTE, N. C.
ALABAMA AGENT:
Young & Vann Supply Co.
Birmingham

★ARALAC... CUSTOM MADE FOR BLENDING

Tobacco and coffee aren't the only blends consumers buy today. Blended fabrics have made a permanent place for themselves in the world of textiles.

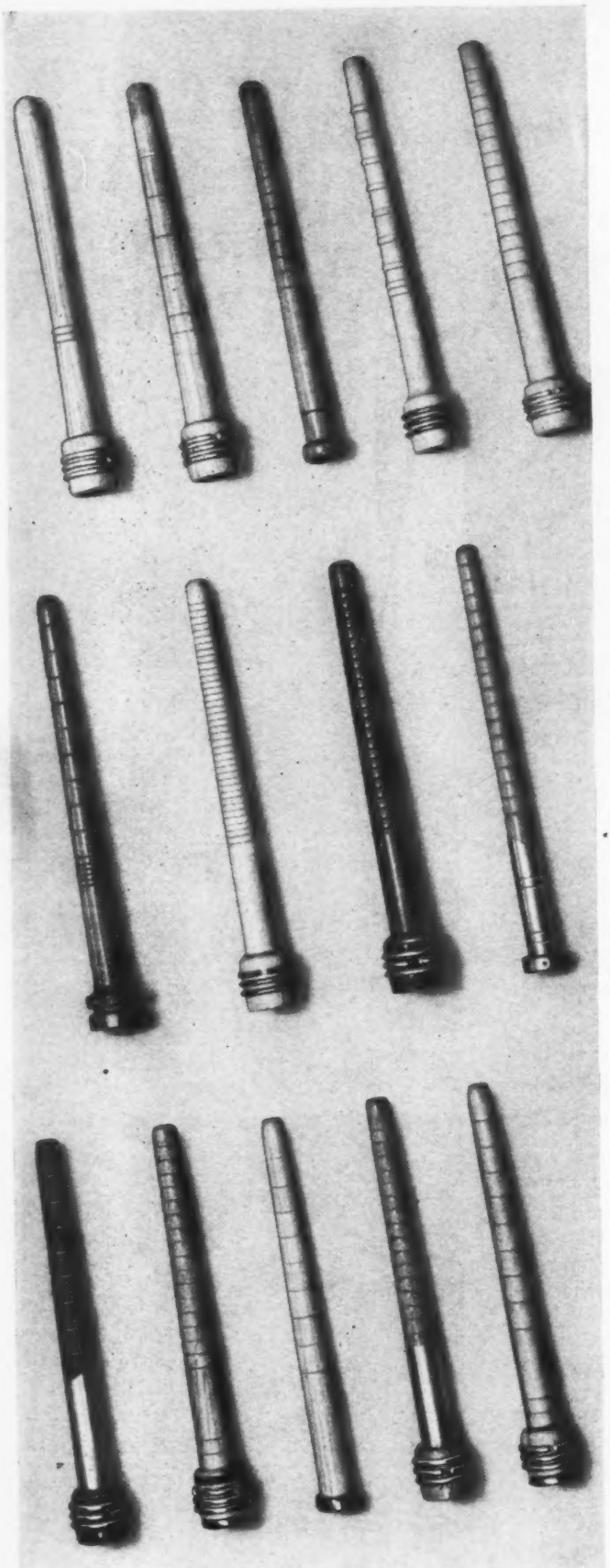
ARALAC, a "custom made" protein fibre, has the warmth, resilience and softness characteristic of all proteins such as wool, cashmere and vicuna. ARALAC is a good mixer, it has the faculty of blending with good fibres without losing its own identity.

ARALAC, INC.

71 Vanderbilt Avenue, New York 17, N. Y.

★T. M. Reg. U. S. Pat. Off.

ARALAC, produced by a division of NATIONAL DAIRY PRODUCTS CORPORATION, represents but one of the many contributions this nation-wide organization is making toward the more efficient utilization of America's agricultural resources.



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UNIFORMITY

TIDE WATER LUBRICANIA

DEFINITION: The uniformity of a lubricant is generally understood to mean the conformity in certain specified essential qualities between two or more separate "lots", "batches", or drums of lubricant.

EXPLANATION: In general a slight variation between drums of lubricant in one or more qualities —carbon residue, pour point, specific gravity, etc.— may not have any noticeable effect on the performance of the lubricant. However, if there is a variation in more than one quality — or if the variation occurs in a quality that has a critical bearing on a specific service for which the lubricant is used (i.e., Demulsibility of Steam Cylinder Oils)—then a serious variation in lubricant performance is likely to result.

TEST: There is no single test that can be made to determine uniformity. In practice, each "batch" of lubricant must conform to certain prescribed test limits. The lubricant is tested for certain specific qualities, depending on the service in which it is to be used. Tests may be made for Viscosity, Flash Point, Carbon Residue, Pour Point, Neutralization Number, Penetration, Specific Gravity, Color, or any other pertinent factors.

CONCLUSION: Most reputable refiners and marketers of lubricating oils, greases, and compounds recognize the extreme importance of maintaining uniformity. For this reason their entire manufacturing and testing procedure is scientifically conducted and strictly controlled. Regular testing by skilled technicians, using modern test equipment, provides a further means of assuring the continuing uniformity of each specific lubricant.

INDUSTRIAL TYCOL OILS-GREASES

GASOLINE POWERS THE ATTACK—
DON'T WASTE A DROP

SCIENTIFICALLY ENGINEERED
FOR EVERY INDUSTRIAL USE **TYCOL**

✻ This is the 13th of a series of informative messages concerning the meaning and significance of commonly used tests and terms employed to describe the characteristics of lubricating oils.

INDUSTRY'S widespread preference for Tycol oils and greases results in part from their unquestioned uniformity within each classification — from the first drum to the thousandth. Equally important is the skill with which they are engineered to meet the specific requirements of each type of service.

Whatever your lubricating need, there is a Tycol lubricant that will do the job with uniformly satisfactory results. Let a Tide Water engineer help you select the best one for your particular need. Call or write any Tide Water office for further details.

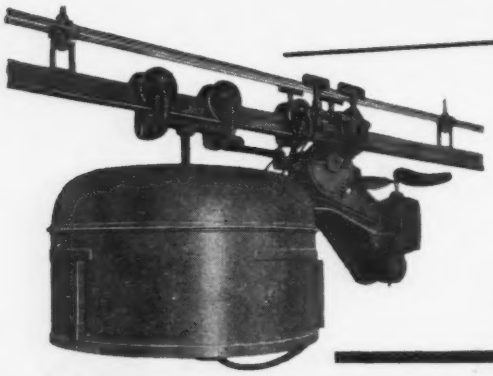
DRUMS! DRUMS! DRUMS!
War needs make it extremely important that all empty drums be returned immediately.

TIDE WATER ASSOCIATED OIL COMPANY

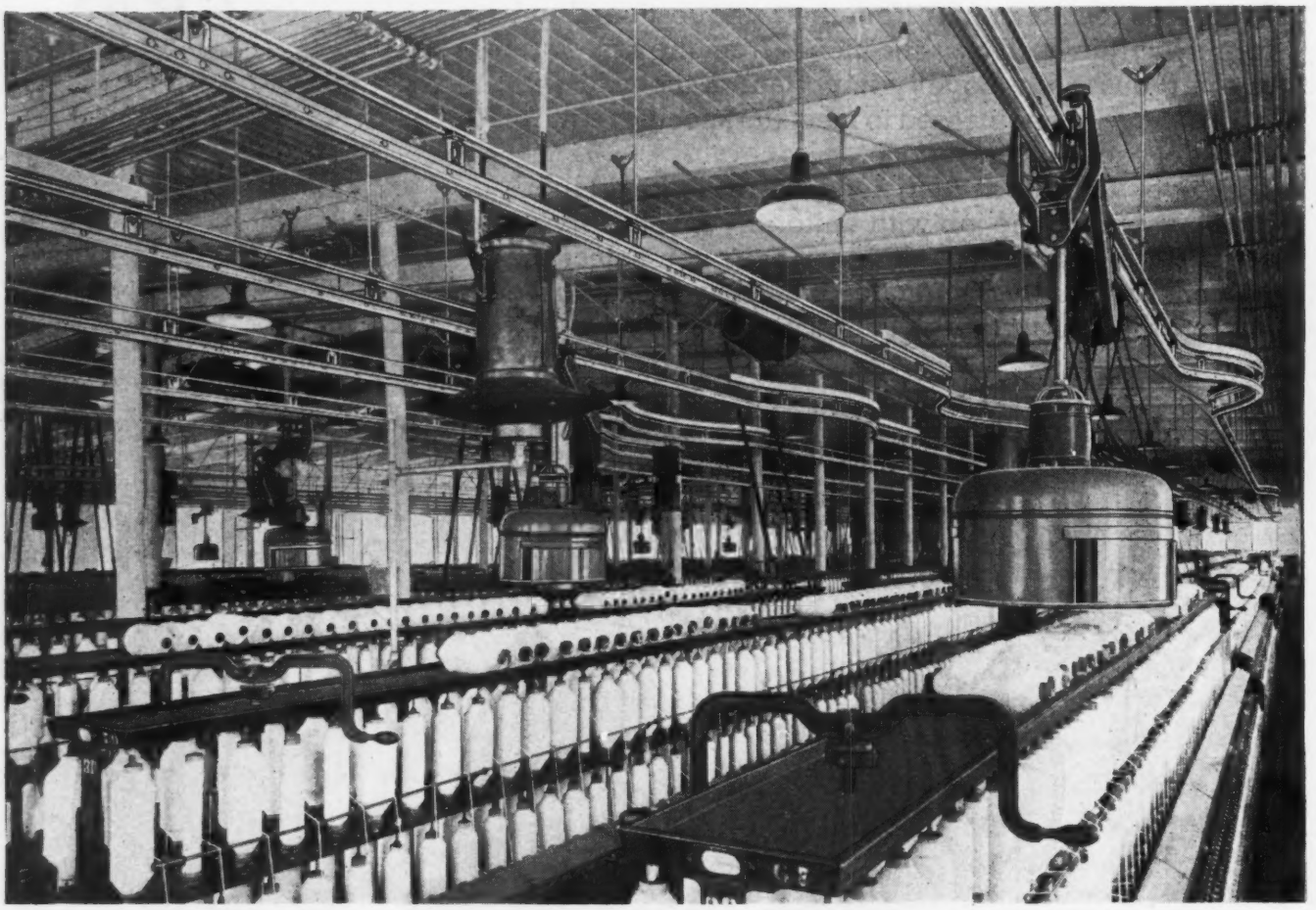
MAKERS OF THE FAMOUS VEEDOL MOTOR OIL • Eastern Division: 17 Battery Place, New York 4, N. Y.

Principal Branch Offices: Boston, Philadelphia, Pittsburgh, Charlotte, N. C.

INDUSTRIAL LUBRICANTS



53% REDUCTION IN SPINNING ROOM ENDS DOWN



★ That's what actually happened in a yarn mill where American MonoRail Automatic Cleaning was installed. A 17-hour test run disclosed the following:

	No. of Ends Down per 1000 Sp. Hrs.	
Yarn No.	Hand Cleaning	Automatic Cleaning
8's	80.5	37.8
13's	22.6	10.6

This 53% reduction represents the difference between hand methods and Controlled Cyclonic Cleaning, where the lint is removed before it can accumulate. Cyclonic Cleaning can be adjusted to meet varying conditions in staple, yarn or humidity. It applies as successfully over winders, twisters and warpers as it does over long draft spinning.

Let an American MonoRail Engineer tell you the complete story of Controlled Cyclonic Cleaning with American MonoRail Overhead Cleaners. No obligations.

THE AMERICAN MONORAIL CO.

13108 Athens Avenue ★ Cleveland 7, Ohio

TECA*

working every shift

TECADET puts in long hours . . . at the giant West Coast aircraft plants of Douglas, Vega, Lockheed and Vultee . . . at many another essential war plant this side of the Mississippi. A famous twill from the sportswear field, it qualified early for women's work clothes, now serves an army of thousands in "safety uniforms" like this one.

Woven with a high percentage of Teca, Eastman *crimped* acetate rayon, Tecadet comes naturally by advantages which have built its demand. It stays crisp and trim-looking on the job . . . because Teca is a resilient fiber, with a lively resistance to crushing and sagging. It offers the comfort of all Teca textures . . . is non-clinging, non-irritating. Stains do not penetrate deeply because of this fiber's low moisture absorption which also makes for ease of cleaning.

Textile men have long counted on Teca for any job where these assets are needed . . . heavy duty or high fashion. For further information about Teca, consult A. M. Tenney Associates, Inc., 10 East 40th Street, New York 16, N. Y., sales representatives for the Tennessee Eastman Corporation, subsidiary of the Eastman Kodak Company.

*Eastman

CRIMPED ACETATE RAYON

TO-DAY....

Our plant is busy building Creels — Warpers and Slashers to handle High Tenacity Rayon Cord for Tires required for Military Vehicles — Planes — Guns — Trucks, etc.

We are, however, accepting rated orders for delivery later in the year on our regular Cocker line of Slashers and Warpers, as well as the Entwistle type Warpers.

TOMORROW....

For your post war production planning (or as soon as priorities are lifted) on High Speed Creels, Warpers, and Slashers, be sure to consult with Cocker Sales Engineers on your needs.

Phone — Wire — or Write Us Today. No obligation

HIGH SPEED SPINDLE DRIVEN RAYON WARPERS—MAGAZINE CONE CREELS FOR RAYON—HIGH SPEED RAYON SIZING MACHINES—TRICOT WARPERS AND MAGAZINE CONE CREELS.

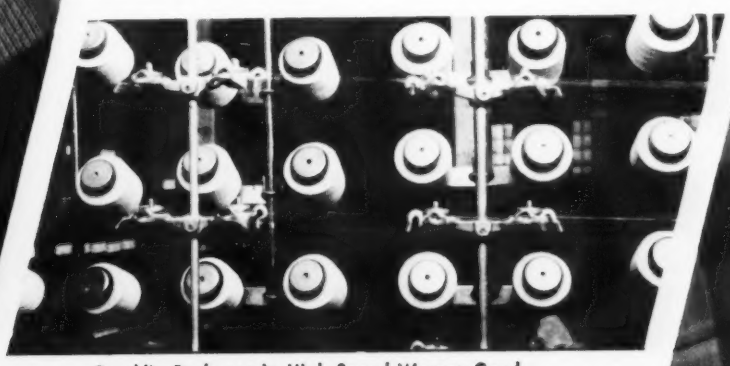
ALSO

COMPLETE WARP PREPARATION EQUIPMENT FOR COTTON AND SPUN RAYON YARNS.

COCKER MACHINE & FOUNDRY CO.

Main Office and Works: **GASTONIA, NORTH CAROLINA**

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT



Franklin Packages in High Speed Warper Creel

A 4 in 1
COLORED YARN SERVICE

No Where Else Can You Get ALL These Advantages

1. ***Four yarn dyeing plants to choose from but only one uniform quality. All plants use the same formulas for standard shades and the same process.***
2. ***You benefit from both special and general experience:—special because each of our plants specializes in serving one or more branches of the textile industry; general because the experience of one plant becomes the experience of all through our "shuttle system",—exchange of information.***
3. ***We supply yarn as well as dyeing.***
4. ***We dye by the original Franklin Process, which has revolutionized yarn dyeing.***
5. ***We can dye up to 2500 lbs. of yarn in one batch, thus assuring prompt handling and uniform shades on large as well as small orders.***

If you make fabrics requiring cotton, worsted, spun rayon, or blended colored yarns, contact our nearest office and we'll tell you which plant can best serve you.

Franklin Process

LARGEST PACKAGE DYERS IN THE WORLD

Providence • Philadelphia • Greenville • Chattanooga • New York
Representative: 40 Worth St., Chicago Representative, 100 West Monroe St.

FORESIGHT *is better than Hindsight*

—WHETHER SKUNK-HUNTING OR OPERATING A MILL!

ASHWORTH CARD SURVEYS represent "foresight" to mill operators everywhere who are guarding against the damaging results of poor carding.

These mill men know that Ashworth's staff of practical card men will make a thorough survey of all clothing, chains, bearings and other wearing parts and will give them a complete report on their findings. They realize, further, that Ashworth card men suggest only essential card repairs and that they can budget these repairs over a period of years if they so desire.

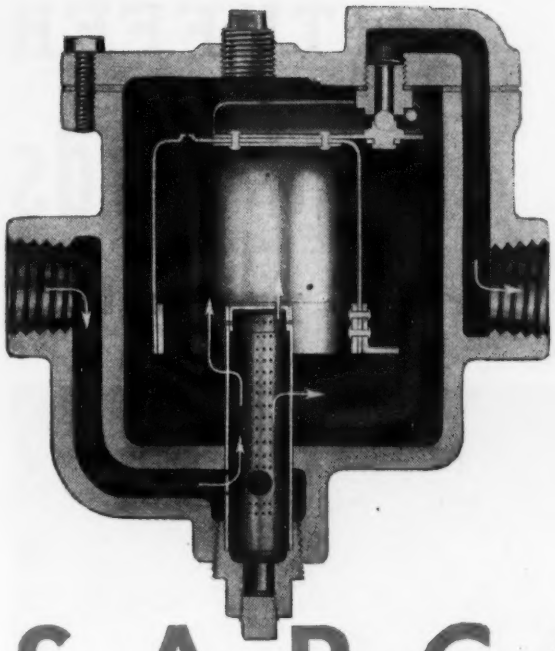
In addition, they know that Ashworth's 3 factories, 6 repair shops and 7 distributing points guarantee continuous supply, prompt repairs and ready availability. Learn the meaning of complete Card Clothing satisfaction . . . contact Ashworth today!

ASHWORTH BROS., INC., Woolen Div., AMERICAN CARD CLOTHING CO.

FALL RIVER*†‡ WORCESTER*‡ PHILADELPHIA*†‡ CHARLOTTE†‡ GREENVILLE†‡
ATLANTA†‡ DALLAS†‡ (Textile Supply Co.)

**Factory • †Repair Shop • ‡Distributing Point*

PRODUCTS AND SERVICES: Card Clothing for Cotton, Wool, Worsted, Silk and Asbestos Cards and for all Types of Napping Machinery • Brusher Clothing and Card Clothing for Special Purposes • Lickerin Wire and Garnet Wire • Sole Distributors for Platt's Metallic Wire • Lickerins and Top Flats Reclothed.



SARCO

BUCKET STEAM TRAPS

Everywhere

On heavy heat using equipment such as presses, vulcanizers and supply lines that have very heavy loads one minute—and little or none the next, this trap is preferred.

It can be piped "straight-thru"; all mechanism is integral with the cover and is protected by a Sarco strainer *inside* the trap. It is made in standard sizes for pressures up to 250 lbs. and in forged steel types up to 900 lbs. Ask for Catalog No. 350.

BUT ONE TRAP IS NOT ENOUGH

Each of the different types of Sarco traps has a separate function. They are not interchangeable.

All save steam. The Sarco man near you knows all types and can fit the right trap to your job. His unbiased advice is yours for the asking.

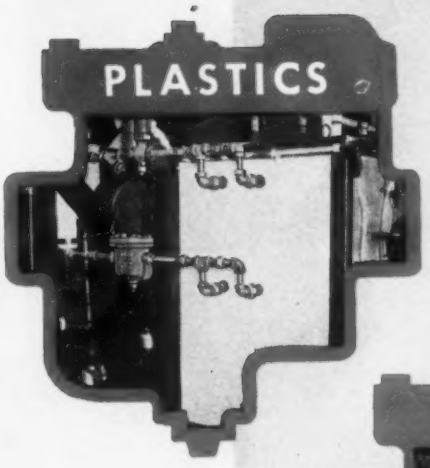
Why not ask the man who knows all types and their application when you change over—the Sarco representative near you?

SARCO COMPANY, INC.

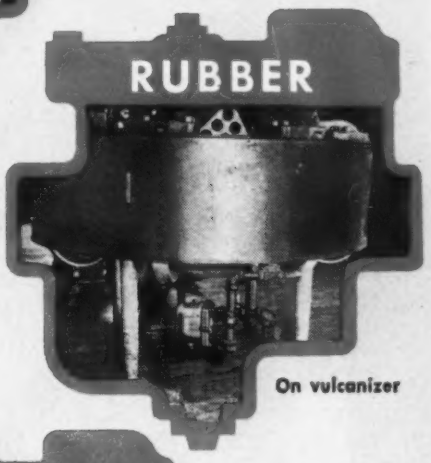
475 FIFTH AVENUE, NEW YORK 17, N. Y.

SARCO CANADA, LTD., 85 Richmond St. W., Toronto, Ont.

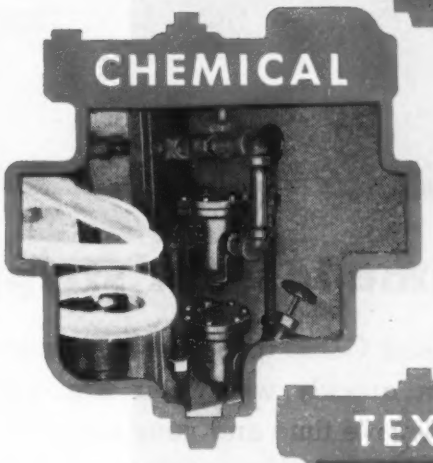
Represented in Principal Cities



In plastics and plating plant



On vulcanizer

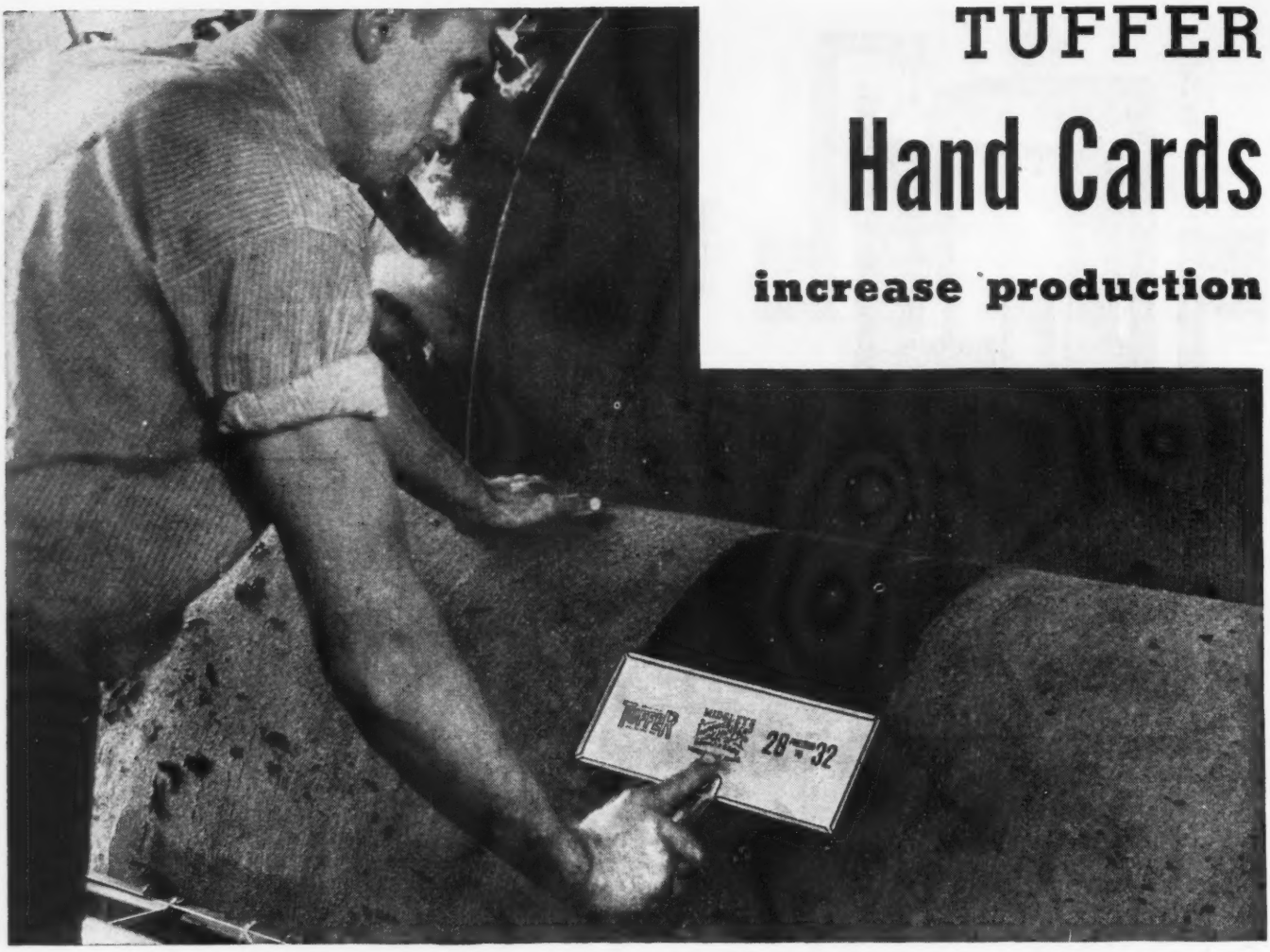


On condenser coils

On dryers

On smoke house coils

37 37



TUFFER Hand Cards

increase production

...less time lost for stripping

TUFFER Hand Cards grip your rolls smoothly and clean them quickly with their firm yet flexible teeth. You save time and your carders' tempers because these strongly constructed Tuffer Hand Cards do a fast and efficient job with less effort and arm-strain.

A customer in a Woolen Mill, says, "We use Tuffer Hand Cards entirely; there is nothing like them on the market for quality, service, and maximum results."

NEW HAND SAMPLING CARD designed especially for mixing blends of stock and coloring . . . **TUFFER SHEEP CARDS** for Breeders and Herdsmen.

HOWARD'S SPECIAL HAND STRIPPING CARD

Improved with a new strongly welded pressed steel handle for positive prevention against breakage. The new handle has a wood grip with fingertip balance control and reinforced steel base. Premium quality leather is used for foundation. Uniform, even tacking gives correct tension. They are made of three-ply indestructible wood for strength and light weight.

MIDGLEY'S IMPROVED HAND STRIPPING CARD

Indestructible boards and handles prevent splitting. Steel clamps protect the edges of the card as well as hold them securely to the board. Teeth are punched through the clamps, giving a holding point every quarter of an inch. The card is held as if in a vise and prevents stretching. The construction reduces to a minimum the "breaking out" or "pulling back" of the wire.

TUFFER CARD CLOTHING

HOWARD BROS. MFG. CO.

WORCESTER, MASSACHUSETTS

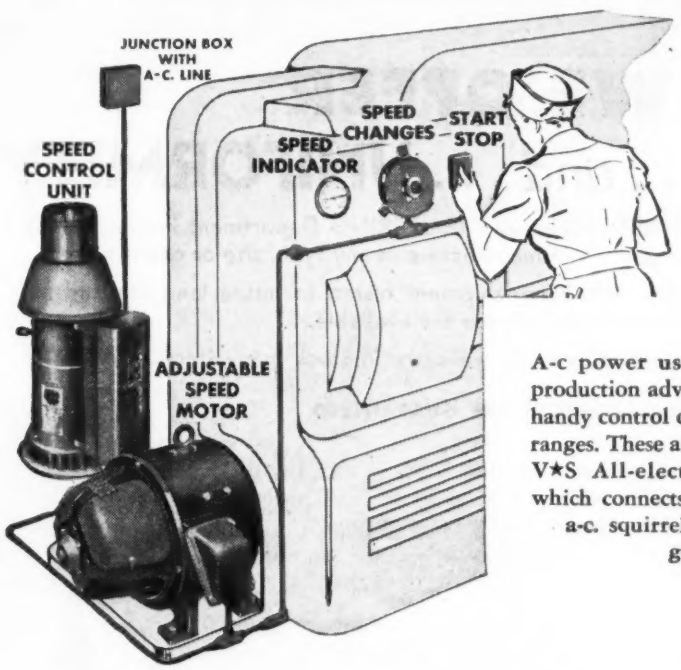
Southern Plants: Atlanta, Ga., Gastonia, N. C. **Branch Offices:** Philadelphia, Dallas. **Canadian Agents:** Colwool Accessories, Ltd., Toronto 2

SPEED CONTROL

One of the big reasons for increased productivity of modern machines is speed control. This has been achieved in many cases by means of Reliance Motor-drive—efficiently, directly and eliminating gears, clutches, brakes and other mechanical go-betweens.

Besides control of speed and acceleration, Motor-drive can be the means of reversing, braking, remote control, tension control and tandem operation.

The possibilities of improved machine efficiency with properly applied Motor-drive are very great. Reliance engineers have done some interesting and resultful work in this field. Perhaps a review of them would produce some ideas profitable to you. Just phone or write our nearest office.



A-c power users can now enjoy all the production advantages gained with easy and handy control of operating speeds over wide ranges. These are obtained with the Reliance V★S All-electric Adjustable-speed Drive which connects to the same outlets as your a-c. squirrel-cage motors. For details get Bulletin 311.

RELIANCE A-C D-C MOTORS

RELIANCE ELECTRIC & ENGINEERING CO.

1088 Ivanhoe Road • Cleveland, Ohio

Birmingham • Boston • Buffalo • Chicago • Cincinnati • Detroit • Greenville (S.C.) • Houston • Los Angeles • Minneapolis • New York Philadelphia • Pittsburgh • Portland (Ore.) • St. Louis • Salt Lake City • San Francisco • Syracuse • Washington, D. C. • other principal cities.

PINS and LAGS

COTTON PICKER LAG — FLAT PINS
RAG OR SHODDY PICKER LAG
WASTE MACHINE MAIN CYLINDER
STEEL-FACED RAG OR SHODDY PICKER LAG
CARDING BEATER LAG

WE OFFER
QUALITY . . . *and* . . . UNIFORMITY

PINS A completely new HARDENING and TEMPERING Department insures lasting quality and uniformity in the pins. We manufacture in any type, size or quantity.

LAGS Kiln dried Rock Maple with every shipment tested to insure long life and no splitting. Lags of every type for every purpose are available.

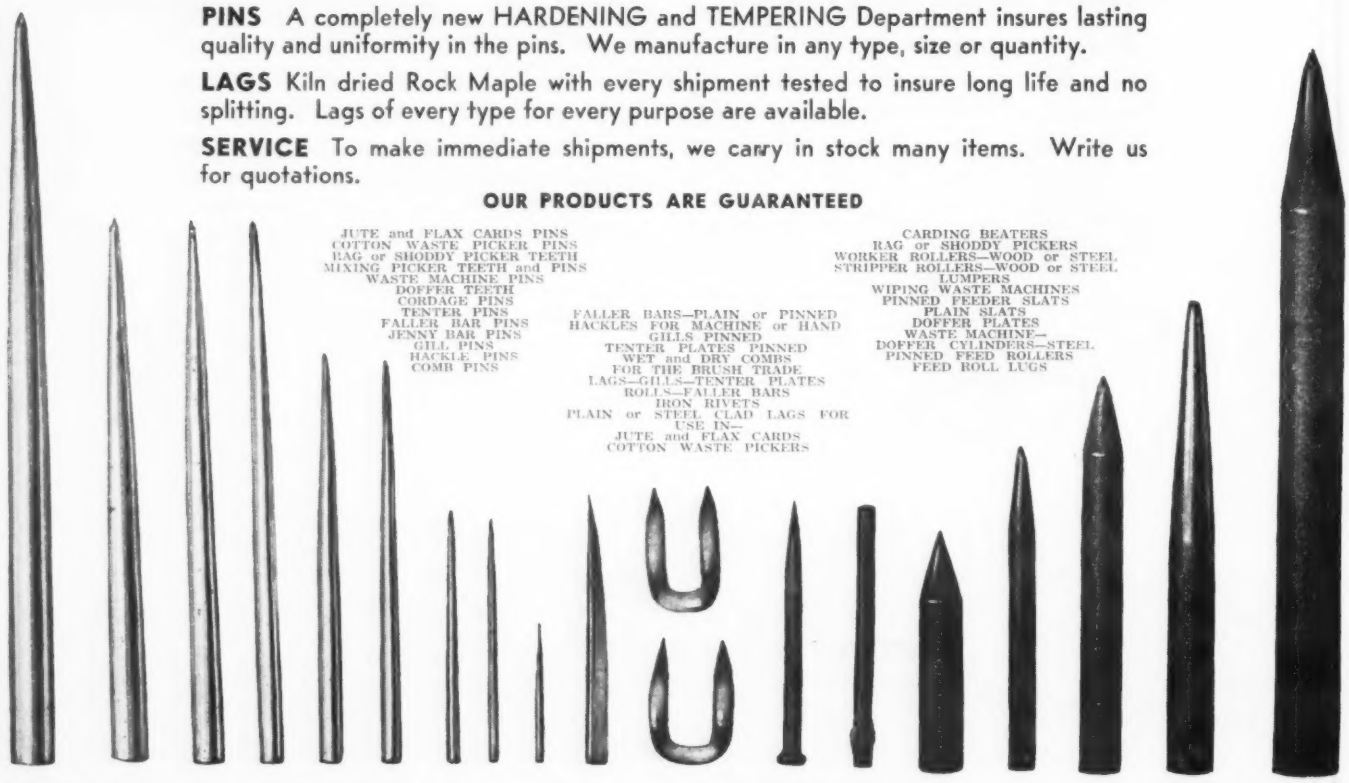
SERVICE To make immediate shipments, we carry in stock many items. Write us for quotations.

OUR PRODUCTS ARE GUARANTEED

JUTE and FLAX CARDS PINS
COTTON WASTE PICKER PINS
RAG or SHODDY PICKER TEETH
MIXING PICKER TEETH and PINS
WASTE MACHINE PINS
DOFFER TEETH
CORDAGE PINS
TENTER PINS
FALLER BAR PINS
JENNY BAR PINS
GILL PINS
HACKLE PINS
COMB PINS

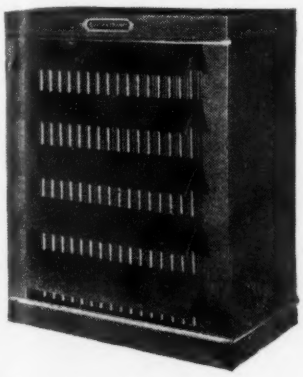
FALLER BARS—PLAIN or PINNED
HACKLES FOR MACHINE or HAND
GILLS PINNED
TENTER PLATES PINNED
WET and DRY COMBS
FOR THE BRUSH TRADE
LAGS—GILLS—TENTER PLATES
ROLLS—FALLER BARS
IRON RIVETS
PLAIN or STEEL CLAD LAGS FOR USE IN—
JUTE and FLAX CARDS
COTTON WASTE PICKERS

CARDING BEATERS
RAG or SHODDY PICKERS
WORKER ROLLERS—WOOD or STEEL
STRIPPER ROLLERS—WOOD or STEEL
LUMPERS
WIPING WASTE MACHINES
PINNED FEEDER SLATS
PLAIN SLATS
DOFFER PLATES
WASTE MACHINE—
DOFFER CYLINDERS—STEEL
PINNED FEED ROLLERS
FEED ROLL LUGS

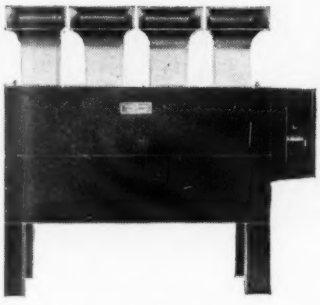


WILLIAM CRABB & CO. **301-3rd Ave., Newark, N. J.**

AMERICAN BLOWER
MECH. DRAFT · AIR-CONDITIONING
FLUID DRIVES · DUST COLLECTORS



American Blower Ventura-fin Unit Heater (Horizontal Type).



American Blower Sirocco Unit Heater (Blower Type).

American Blower Vertical Type Unit Heater.

ARMY E NAVY
For Excellence in Production

June in January

ALL WINTER LONG!

Yes, you can enjoy June in January and in every other month when heating is required, right in your own plant with American Blower Unit Heaters.

No hot spots or cold corners, but steady, healthful temperatures with heated air forced into working areas — where you want it — when you need it.

There are three types of American Blower Unit Heaters—Vertical Units for heating large, high-ceilinged industrial plants and other areas where heated air must be forced over wide spaces—Horizontal Type for wall or ceiling mountings in factories, plant offices, garages, warehouses, etc., where it is advisable to force heated air over wide areas at desired levels — and the Blower Type of Sirocco Unit Heater for ceiling applications or floor installations in large, hard-to-heat industrial plants, airplane hangars and shops.

Best of all, you can buy these units now with an order carrying a Priority Rating of AA-5 or better, with a specified delivery date.

American Blower Unit Heaters save you up to 20% or more in fuel consumption, and provide ideal working conditions.

AMERICAN BLOWER

AMERICAN BLOWER CORPORATION, DETROIT, MICHIGAN
CANADIAN SIROCCO COMPANY, LTD., WINDSOR, ONTARIO
Division of AMERICAN RADIATOR & Standard Sanitary CORPORATION

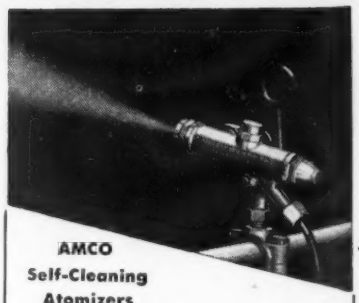
DON'T FORGET THE "Thirsty" FIBER!

Lonsdale Company

EVERY month brings announcements of new textile machines and redesign of old ones. The requirements of greater speeds and new fibers are being met by machinery builders.

In your plans for present or postwar changeovers to newer and faster machines, remember this – *fibers are thirsty*. Unless you are ready with adequate, correctly engineered humidification, the faster speeds and the tricky fibers will only increase your headaches and production won't come up to expectations.

Now is the time to call in an AMCO engineer. Backed by 50 years experience in handling every type of mill and fiber, he is in a position to assist you to get full value from your new machinery investments. Write or call.



AMCO Self-Cleaning Atomizers

AUTOMATICALLY SELF-CLEANING

•

CONSTANT, FULL CAPACITY DELIVERY

•

NO-DRIP—NO FEATHERING DOWN

•

MINIMUM MAINTENANCE COST

•

LONG LIFE

AMCO HUMIDIFICATION

AMERICAN MOISTENING COMPANY, Providence 1, R. I. • Atlanta • Boston • Charlotte

Form J — General Purpose Application

The Top Half Closed on Century Form J Motors Gives EXTRA PROTECTION

Against Falling Solids and Dripping Liquids

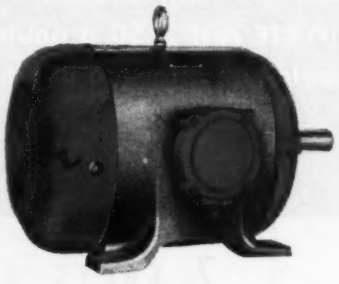
The Century Form J motor is a general purpose, open rated, continuous duty motor with an extra protective safety factor. The upper half of motor frame is completely closed, reducing the possibility of dripping liquids and falling solids entering the vital parts of the motor.

Adequate ventilation to compensate for the partial inclosure is provided by two fans to force a blast of cooling air around the bearings and ventilating passages surrounding the windings.

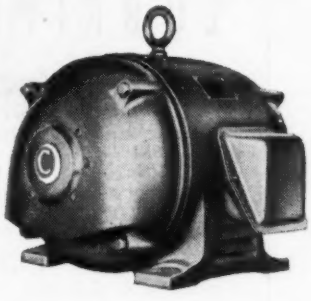
A Century Totally Enclosed Fan Cooled motor is available for installations requiring protection from atmospheres charged with abnormal quantities of metallic or abrasive dusts or powders, or abnormal amounts of acids, or alkali fumes.

For complete information on how Century motors are being used in the textile industry — and how they can bring benefits to you, call in a Century engineer, today.

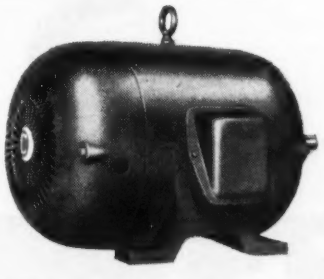
3 Other Types of Protection



Century Explosion Proof Motor



Splash Proof Protection



TEFC — Protects Against Destructive Dust, Grit, Powdered Materials

Century C MOTORS

CENTURY ELECTRIC CO.

1806 Pine Street St. Louis 3, Missouri

Offices and Stock Points in Principal Cities 382

MAKE ONE BEARING OUTLIVE TWO!

One plant that regularly had two or three bearing failures a month writes us, "We have had only one bearing failure in five years since using LUBRIPLATE"... another writes, "Pulled our ball bearing temperatures down from 170° to 130°F"... still another, "If LUBRIPLATE cost $1.50 a pound we could still afford to use it."

BALL BEARING LUBRIPLATE

Over a period of years this outstanding grease type lubricant has reflected superior performance on the general run of ball and roller bearings operating under normal conditions at speeds up to 5,000 R. P. M. and temperatures from zero to 300 degrees F.

Long time users of BALL BEARING LUBRIPLATE everywhere attest to its superiority in providing cool and quiet operation – protection against corrosion, and of major importance, substantial reduction in bearing replacement costs.

Write today for your copy of Bulletin No. 1-43 containing valuable data on the lubrication and care of anti-friction bearings.

7 FACTS ABOUT LUBRIPLATE

1. *LUBRIPLATE produces an ultra-smooth, wear-resisting bearing surface.* 2. *LUBRIPLATE reduces friction, thus lowering maintenance and power costs.* 3. *LUBRIPLATE resists rust, corrosion and pitting.* 4. *Most LUBRIPLATE products are white. LUBRIPLATE assures clean lubrication.* 5. *LUBRIPLATE outlasts ordinary lubricants many times.* 6. *LUBRIPLATE is economical—a little goes a long way.* 7. *LUBRIPLATE is available in fluid and grease types for every need.*

LUBRIPLATE DIVISION
FISKE BROTHERS REFINING COMPANY
Newark, N. J. **SINCE 1870** Toledo, Ohio
DEALERS FROM COAST TO COAST

LUBRIPLATE

"Its the Film"

THE MODERN LUBRICANT *that Arrests Progressive wear*

"GOOD KNITTING IS A *Must* TODAY"

SAYS MISS SYLVIA SEE, DEPARTMENT MANAGER OF GIRLS' WEAR AND GIRLS' UNDERWEAR, L. BAMBERGER & CO., NEWARK, N. J.

"Good knitting is always essential. In children's wear it is a 'must,' particularly today, when substitute yarns are unavoidable. Mothers never relax their standards when shopping for their 'young and lovelies.' They seek combed yarn and fine gauge for good appearance; smooth finish and clean seams for comfort; and elasticity of stitch and uniformity of tension for easy movement. So do I."

And every good knitting mill is trying to give these qualities in full measure in spite of substitute yarns and the lack of skilled labor. That's why so many of them insist on the use of Torrington Needles. They know that Torrington machine-controlled quality contributes not only to the beauty but also to the durability of knitting—a factor of great importance in these days when "make it last" is the idea behind every purchase.

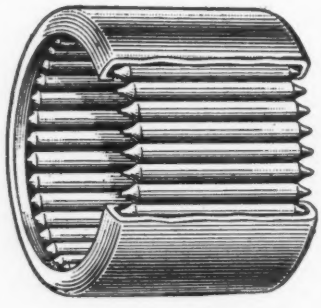
THE TORRINGTON COMPANY
Torrington, Conn., U. S. A.
Established 1866
Branches: New York • Philadelphia • Chicago
Greensboro, N. C. • Boston • St. Louis
Toronto, Canada

TORRINGTON *Latch Needles*

4 Ways Needle Bearings Promote Cost Economies

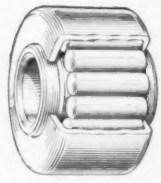
TYPE NCS

TYPE AT



TYPE DC

TYPE FDT



TYPE PN

LOWEST COST PER GIVEN LOAD OF ANY ANTI-FRICTION BEARING IS BUT ONE OF THE NEEDLE BEARING'S CONTRIBUTIONS TO COST SAVINGS

•

One of the surprising features of Torrington Needle Bearings, particularly in the case of the widely used D.C. Type, is their low cost—for they are recognized as the lowest in cost per given load of any anti-friction bearing!

Yet initial cost is only one of several economy features which accrue to users of these modern anti-friction units. Consider, for example, the advantage of their high unit capacity in relation to cost. The smaller *size* of the Torrington Needle Bearings which may be used results in savings of size, weight and material costs of surrounding members.

This contributes in turn to easier, faster handling of all parts on the production line. But it is the ease and speed with which Torrington Needle Bearings are installed that effect a major saving in time and labor required for assembly. Furthermore, neither the use of snap rings nor staking the bearings in position is required—as once properly installed Needle Bearings will not shift or creep in the housing.

Efficient lubrication—due to the basic design of these Needle Bearings—eliminates the need for complicated or costly *systems* for providing ample lubrication. This means simplification of the design and production jobs.

Economies to Aid User

All of these advantages add up to still another important cost consideration—a longer life of trouble-free service—for the product using Torrington Needle Bearings. Reduced costs of servicing, replacement parts and repair, along with lower operating costs due to increased product efficiency are features your *customers* will also appreciate.

If you are seeking manufacturing economies and wish to increase your product's efficiency at the same time, you may find the answer in Torrington Needle Bearings. Our Engineering Department will gladly work with you in securing the full advantages of these bearings in *your* own product planning. Write for further information. A copy of our Needle Bearing Catalog No. 30-A should be in every product engineer's file. Send today for your copy.

THE TORRINGTON COMPANY

Established 1866 • Torrington, Conn. • South Bend 21, Ind.

"Makers of Needle Bearings and Needle Bearing Rollers"

New York, Boston, Philadelphia, Detroit, Cleveland, Seattle, San Francisco, Chicago, Los Angeles, Toronto, London, England

LET'S GO! U.S.A. KEEP 'EM FLYING

TORRINGTON

NEEDLE BEARINGS

OWI Photo by Palmer in an Allegheny Ludlum plant

Stainless Steel Carriers

FOR WAR'S VITAL LIQUIDS

HAND BOOK OF SPECIAL STEELS

Newly revised and reprinted—a comprehensive book on the properties, uses, and best methods of handling, treatment, etc. of tool, stainless and other alloy steels. Plenty of tables to facilitate quick reference and selection. 136 pages, pocket-sized, latest data.

SEND FOR YOUR COPY

Address Dept. TW-24

WHO'S to say what job is more vital than another, when the chips are down? Those Allegheny Metal tubes aren't gun barrels, but they carry charges quite as potent in the overall picture. Much stainless tubing has gone into the manufacture of high-octane gas, synthetic rubber, magnesium, food and dairy products, etc.—and in more minute sizes, it is indispensable in aircraft fuel and instrument lines, drug and medical work and similar uses.

In each case, the job was a function of stainless steel's ability to withstand corrosion or heat, or impart greater strength and reliability. Where can Allegheny Metal —either in tubing, bars, wire, sheets, strip, castings or forgings—operate to improve *your* products? Our Technical Staff is at your service.

Allegheny Ludlum
STEEL CORPORATION
GENERAL OFFICES: BRACKENRIDGE, PENNA.

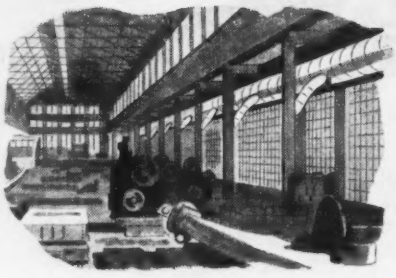
W&D A-9333

Allegheny Metal also handled by all Joseph T. Ryerson & Son, Inc. warehouses

IT TAKES BATTLE-SEASONED STRATEGY *to lick Winter's Icy Blasts*

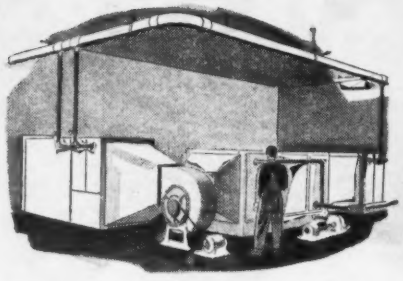
"KNOW YOUR ENEMIES"

NO GENERAL WINS BATTLES today without skillfully deploying *all* branches of modern warfare at his command. "Logistics"—it's called. And the logistics of heating and ventilating must be brought to bear to wage *and win* your annual battle against besieging icy blasts. For instance—sneak attacks by cold air at loading platforms, infiltration of drafts at wide window areas . . . call for special defense tactics. Shape and size of the room, height of the ceiling, paths of possible heat travel, fume control factors . . . all must be accounted for—if you are to lick the "chilly" enemies of comfort *at minimum cost to your fuel supply*. Here's an outline of Sturtevant's battle-seasoned strategies *you* can *draft* to conquer winter's dictatorship . . .



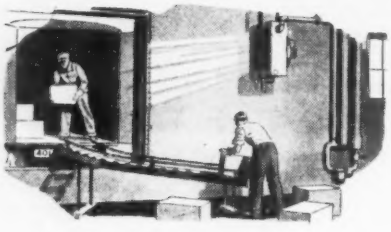
HOT BLAST CENTRAL HEATING

Here's your infantry . . . it's tops for maintaining uniform, work-productive temperatures over large, generally unobstructed interiors. A fan speeds heat from extended surface coils through continuous heat distributing ducts equipped with outlet vents spaced for proper distribution. Air may be continually recirculated—or, in the event appreciable volumes are exhausted in fume or dust control, supplemented with outside air.



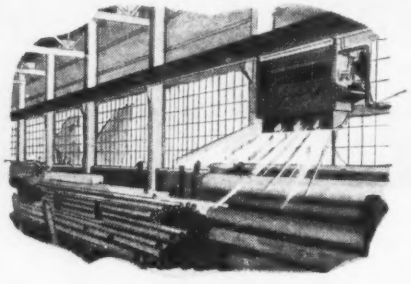
COMBINED HEATING and VENTILATING

Aerial support may be necessary for the hot blast central heating equipment. Positive fresh air ventilation is accomplished by exhausting stale air—fume, dust or fog—and inducting equal quantities of outside air. For optimum processing and working conditions, air washers, filterwashers or electric precipitrons take care of air cleaning; and humidification is obtained inexpensively by the inclusion of air washers and automatic controls.



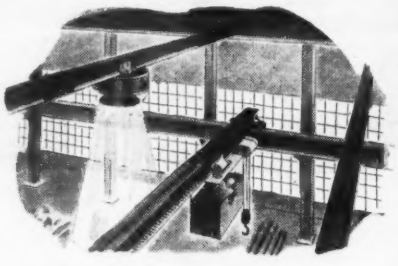
SPEED HEATER

Call on this "commando" to kill "cold spots" anywhere! . . . or to take over the job of heating the entire plant . . . in low or moderate height ceiling areas. It is a horizontal propeller fan type—with capacities up to 300,000 btu per hour. Spotted around the plant, it provides *balanced* heat—bringing normally frigid zones around doors, windows and the like within the "comfort zone."



MULTIVANE HEATER

Need some heavy artillery? This large-volume unit heater evenly blankets large areas with precision, "range control" nozzles. It has a centrifugal type fan—and develops up to 1,000,000 btu per hour. May be installed on wall, floor or ceiling. Automatic controls are available to "mix" heated and unheated air, maintaining nozzle discharge temperature at any desired degree.



DOWNBLAST HEATER

And here's your dive bomber! It offers the perfect solution for hard-to-heat areas—where heat flow is hampered by high ceilings, partitions, shelving or equipment. A vertical propeller fan discharges up to 400,000 btu per hour *downward* at high velocity. Installations at heights of 30 feet or more are practical because the heat waves mushroom off the floor flooding the working areas.

The Time is Ripe to Start Your Postwar Planning—*Sturtevant is Ready to Help!*

If you've been limping along with makeshift heating and ventilating systems . . . or, if you want to effect *new* economies in cost and *new* highs in production efficiency to better your peacetime competitive position—*now is the time* to start postwar planning. Sturtevant is ready to work with you or your planning committee to get *engineered air* recommendations *down in black and white*—ready for budget approval—and ready for action on V-day!

B. F. STURTEVANT COMPANY • *Hyde Park, Boston 36, Mass.*

Sturtevant
REG U S PAT OFF
Puts Air to Work

SYSTEMS and EQUIPMENT
Engineered for Efficiency in

Heating
Ventilating
Air Conditioning
Dust and Fume Control
Pneumatic Conveying
Vacuum Cleaning
Mechanical Draft

ONLY DAYTON Gives You All This in a Reversible Picker

Cost-Cutting Advantages of Dayton's 5-POINT EXCLUSIVE CONSTRUCTION

1	2	3	4	5
Composition harder around the spindle rod. No oil required.	Composition softer at picker stick contact for proper cushion to shuttle point.	Special composition at shuttle contact eliminates shuttle point loosening.	Perfect throw to shuttle throughout life of picker.	Tailored to fit. No reaming out of hole or other alterations are required.

Leading mills call the Dayton Reversible Drop-Box Picker a real triumph in picker construction. They have found that it cuts down costly delays and replacements—gives them faster, cleaner production — saves time and money every day of its long life.

Every one of these remarkable pickers is a complete, precisely engineered unit, perfect and flawless in every respect. No reaming or alteration of any kind is required—pre-aging and dipping are eliminated.

You'll free yourself of all your old picker troubles when you switch to long-life Dayton Reversible Drop-Box Pickers. They are typical of the Technical Excellence for which Dayton Rubber products are known. Write for the full facts or get in touch with your nearest Dayton Rubber distributor.

THE DAYTON RUBBER MFG. CO.
Dayton 1, Ohio Waynesville, N. C.
Main Sales Office: Woodside Bldg., Greenville, S. C.

Maintain Victory Speeds — Conserve Your Tires

FAMOUS DAYTON DELUXE LOOP PICKERS
Reduce shuttle costs.
Keep their shape and "stay put" on the stick.
Approximately twice as strong as others and easier to install.

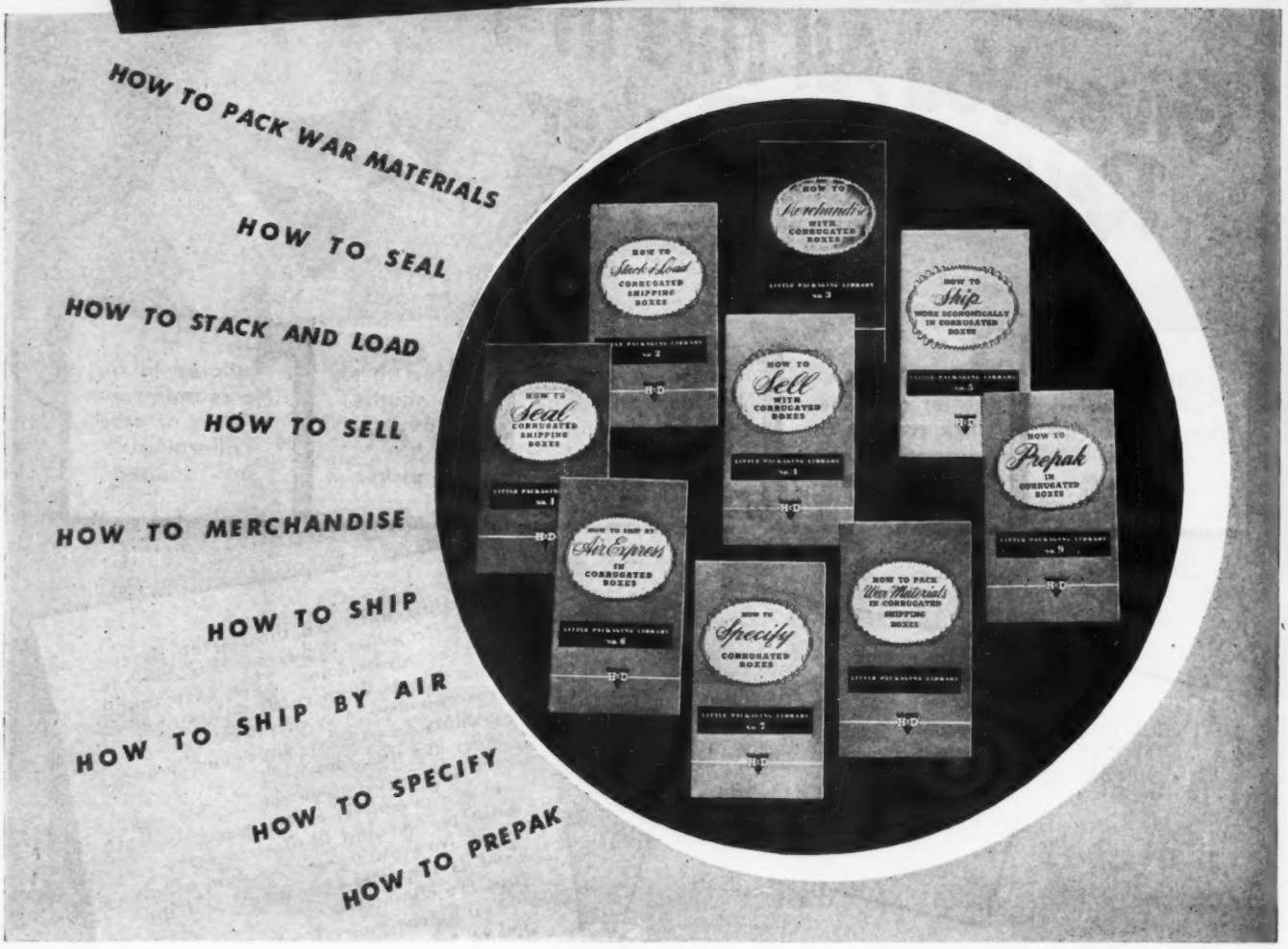
Pickers by

Dayton Rubber

REG. TRADE MARK THE DAYTON RUBBER MFG. CO.

The Mark of Technical Excellence in Synthetic Rubber

9 WAYS TO BETTER POST-WAR PACKAGING



H & D Little Packaging Library—FREE on Request

Packaging war goods — that's the all-important task of H & D today, BUT H & D's war-time activities are bringing a wealth of valuable experiences, and an abundance of new packaging skills and techniques that will have a great and good effect on the progress of post-Victory packaging.

With packaging trends constantly changing and packaging materials under continuous development, H & D published its Little Packaging Library to make your entire packaging procedure more efficient. The "Library" presents the packaging experience of hundreds of manufacturers and contains many real contributions to improved packaging and shipping methods to savings in materials, manpower, machinery and transportation facilities.

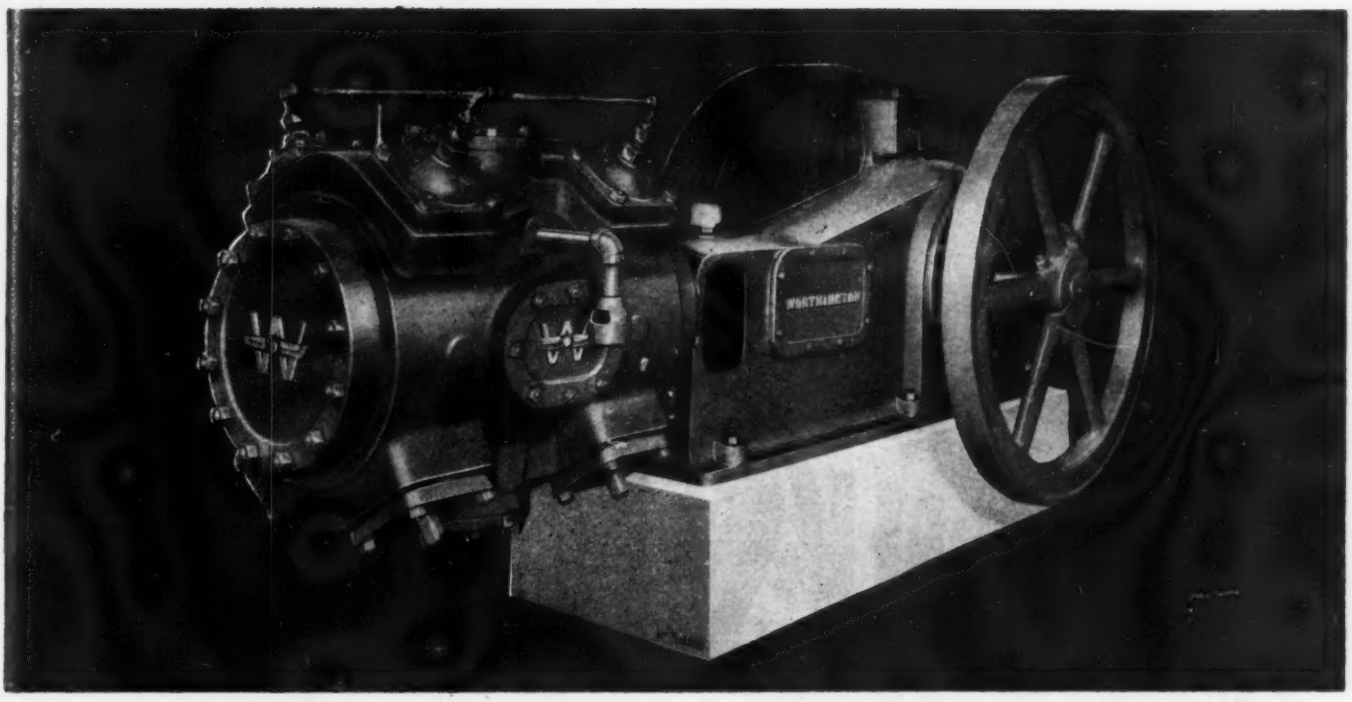
Whatever your packaging assignments are today — whatever they will be tomorrow, these booklets will prove of value to you and your organization. The booklets are FREE without obligation — write for as many sets as you need. Address Hinde & Dauch, 4430 Decatur Street, Sandusky, Ohio.

• • •

FACTORIES: in Baltimore • Boston • Buffalo • Chicago Cleveland • Detroit • Gloucester, N. J. • Hoboken Kansas City • Lenoir, N. C. • Montreal • Richmond St. Louis • Sandusky, Ohio • Toronto

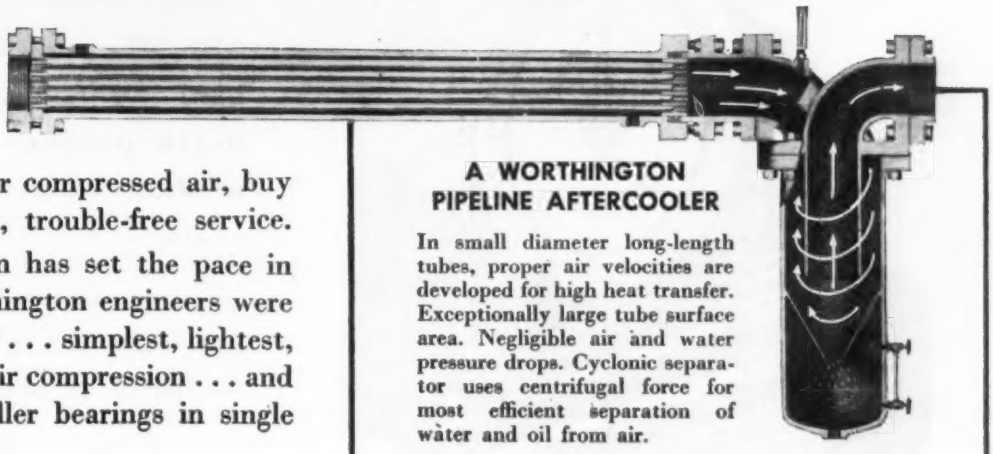
For postwar packaging . . better see **H&D HINDE & DAUCH**

AUTHORITY ON PACKAGING . . . CORRUGATED SHIPPING BOXES



Compressor BY WORTHINGTON

For Dependable Air at Lowest Cost



A WORTHINGTON PIPELINE AFTERCOOLER

In small diameter long-length tubes, proper air velocities are developed for high heat transfer. Exceptionally large tube surface area. Negligible air and water pressure drops. Cyclonic separator uses centrifugal force for most efficient separation of water and oil from air.

No other compressor will outperform a Worthington

Whatever your need for compressed air, buy Worthington for efficient, trouble-free service.

For years, Worthington has set the pace in compressor design. Worthington engineers were *first* with Feather Valves* . . . simplest, lightest, most effective valves for air compression . . . and *first* with anti-friction roller bearings in single horizontal compressors.

In many cases, in all kinds of manufacturing plants from coast to coast, the type "HB" Worthington Air Compressor shown above has been in operation, without major adjustments, for more than a quarter of a century.

Write for complete data—installation photos—in Bulletin L-640-B1. AC 4-6

* Reg. U. S. Pat. Off.

WORTH BEHIND THE NAME
WORTHINGTON

WORTHINGTON PUMP AND MACHINERY CORPORATION, HARRISON, N. J., U. S. A.

A name worth remembering!

FAIRBANKS-MORSE

After the war, the name Fairbanks-Morse will continue to mark performance-proved products only, as it has for 114 years.

No race to get civilian products onto the market early will tempt us to break this pledge.

★ ★ ★

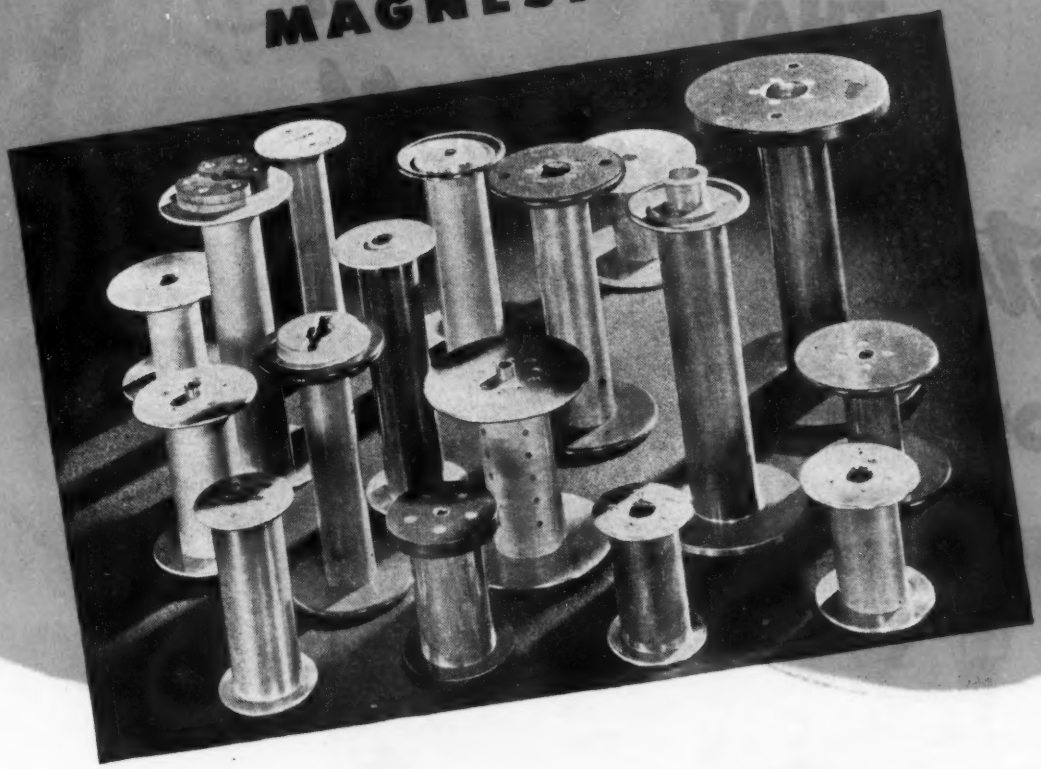
Fairbanks-Morse Scales are precision-built instruments which provide mechanically perfect weight recording. Of sturdy scientific construction without springs or delicate parts, the countless types, styles, and modifications serve American business and industry by keeping books, records, and inventories, saving time, preventing errors, and speeding production.

BUY MORE WAR BONDS

DIESEL LOCOMOTIVES • DIESEL ENGINES • GENERATORS • MOTORS • SCALES • PUMPS • STOKERS • RAILROAD AND FARM EQUIPMENT

FAIRBANKS, MORSE & CO., CHICAGO 5, ILLINOIS

Bobbins with a heart of MAGNESIUM TUBING



Running true and accurately balanced by the manufacturer, these bobbins stay that way. Their barrels are made of strong, lightweight Mazlo Magnesium tubing; flanges, too, can be made of magnesium. You get continued smooth operation at high speeds, less vibration and, consequently, longer bearing life for spinning and twisting machines.

With magnesium, there's no swelling or splintering to destroy the usefulness of these bobbins. They weigh no more, and often less, than the old style spools.

In reciprocating parts of textile machinery, the use of lighter weight magnesium has also produced remarkable results. Machines have been speeded up, greatly increasing production. Because of reduced vibration, products are more uniform and better in quality. At the same time, wear and tear on machines is less, so upkeep is lower.

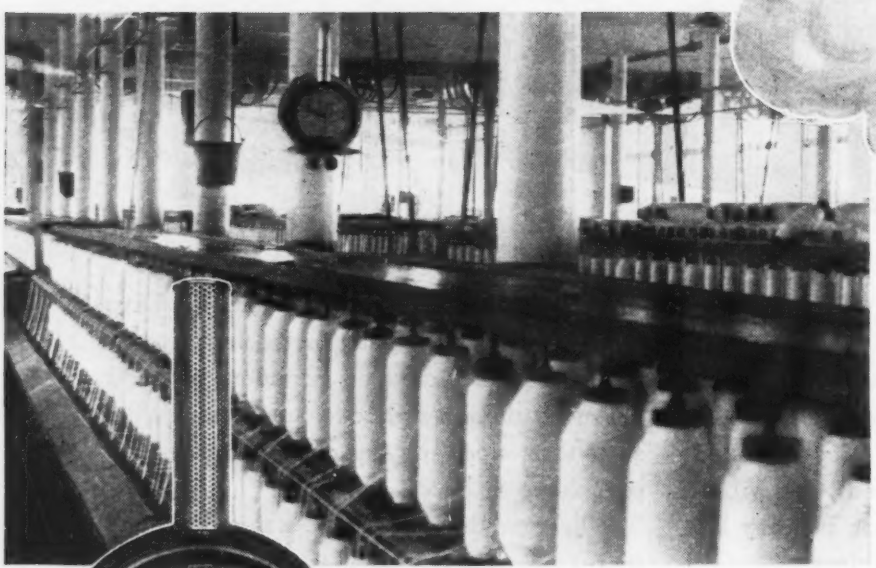
Where production can be boosted without increased man power, it is now possible to obtain magnesium products for such uses. Our engineers will help you determine what you need. ALUMINUM COMPANY OF AMERICA (Sales Agent for Mazlo Magnesium Products) 1705 Gulf Building, Pittsburgh 19, Pennsylvania.

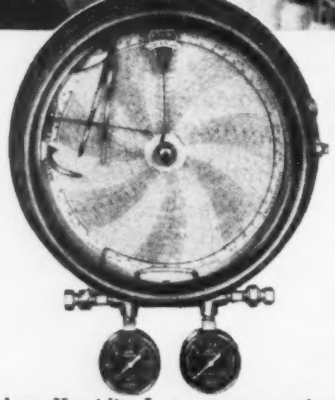
MAGNESIUM MAZLO PRODUCTS

AMERICAN MAGNESIUM CORPORATION

SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA

ENGINEERING KNOW-HOW THAT "Puts the Calipers" ON HUMIDITY!





Foxboro Humidity Instruments are simple, rugged, accurate...engineered by men who know the requirements of the textile industry.

Humidity is a tricky factor that can rise or fall without your knowledge. Yet humidity which is out of line can raise havoc with weave-room production and quality. That's why it pays to let Foxboro "put the calipers" on humidity conditions in your mill!

Through more than a quarter century of original research and development in all types of humidity problems, Foxboro engineers have gained the "know how" to help you keep humidity exactly where it belongs – every instant of every day.

Foxboro has perfected the direct-reading hygroscopic type of instrument which is far more sensitive, accurate, and reliable than ordinary regulators.

Why not use this greater "know how" to indicate, record, or control (pneumatically or electrically) the humidity in your mill? Write for authoritative Humidity Bulletin 188-4. **The Foxboro Company, 84 Neponset Ave., Foxboro, Mass., U.S.A.** Branches in principal cities.

FOXBORO REG. U. S. PAT. OFF. **HUMIDITY** INDICATORS RECORDERS CONTROLLERS

"The tide has turned and free men of the world are marching together to victory."

GENERAL DYESTUFF CORPORATION

GDC DYESTUFFS ARE IN SERVICE ALL OVER THE WORLD

Confidence —

Manufacturers may face the post-war adjustment period with greater confidence, if supported by the financial and credit services of a strong factoring organization.

Factoring enables a manufacturer to retain his own capital funds in his own business, instead of providing capital for the customers who buy his products; — at the same time factoring provides for such customers the usual credit terms on their purchases.

The factor assumes all risks of credit losses, and makes available immediately in cash, the net value of shipments as made.

Wider distribution and greater sales volume can be attained through factoring, without risk of credit losses, and on less invested capital.

INQUIRIES INVITED

John P. Maguire & Company

INCORPORATED

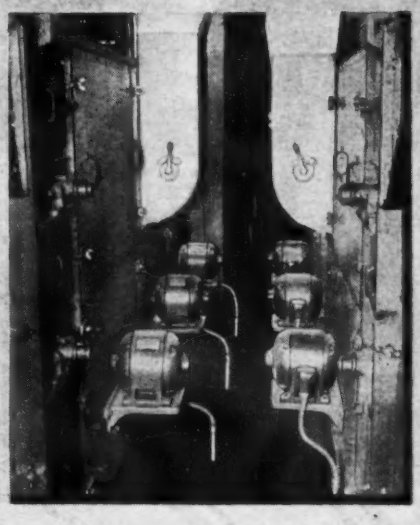
Factors

ASHland 4-4141

370 FOURTH AVENUE, NEW YORK, 10, N.Y.

WHEN THE HEAT'S ON

Motor-driven machinery is often called upon to operate under conditions of extreme heat and humidity. For example, the motors on this wool-plant washer must operate in an air temperature of 100° F., with humidity higher than 80 per cent. Conditions like this would shorten the life of any motor lacking effective, performance-tested ventilation design. The double-end cooling system of the Tri-Clad motor helps offset the effects of high ambient temperatures common to heaters, dryers, and many ventilating-fan applications. In addition, motor windings of Formex wire (Class A insulation) are unusually long-lived under total temperatures (ambient plus rise) up to 194 F. For even higher temperatures, Class B insulation offers still greater protection.



G-E Tri-Clad motors applied to Sargent back washers at plant of the Southwell Wool Combing Company, No. Chelmsford, Mass.

Multi-Point Tests on TRI CLAD Motors Tell Temperature Conditions Inside and Out

Dozens of thermo-couples and thermometers at all vital points of this Tri-Clad motor reveal temperatures under a wide range of load conditions. First, tests like this helped to perfect the double-end ventilation design. Now regular tests of Tri-Clad motors taken off the production line verify previously established temperature-rise limits, and ability of insulation to stand up. Continued research along the same lines, including operation in enclosures which restrict air flow, points the way to further improvements in the future. *General Electric Company, Schenectady 5, N. Y.*

GENERAL ELECTRIC

Every week 192,000 G-E employees purchase more than a million dollars' worth of War Bonds.

• This factory floor used to be wood. The high temperature of the room below made workers here uncomfortable. So now a concrete floor, Foamglas-insulated, is being laid to prevent downstairs heat from penetrating this room through the floor.

New floor insulation

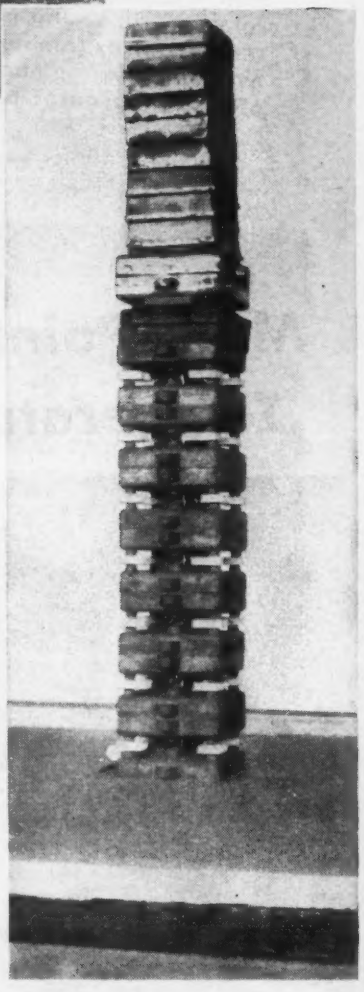
aids temperature control · · · prevents condensation · · · carries the load

PC FOAMGLAS may be new . . . a youngster in the floor insulating field . . . but it's certainly causing a stir! In plants where the precise control of temperatures and humidities is essential . . . where condensation is a problem . . . where insulation must be *permanent* as well as efficient . . . PC Foamglas has proved a "natural" for the insulation of floors.

And it's easy to see why. This cellular material is *glass*. And that means it's impervious to common acid atmospheres, moisture, fumes, vapors. It does not deteriorate with age. It eliminates many of the expensive repairs and replacements so common where non-permanent insulating materials are used.

Foamglas is fireproof and verminproof, too. And so strong and rigid, despite its light weight, that it can carry floor loads far exceeding normal without crushing.

You can't beat PC Foamglas for a permanent, all-around insulating material . . . whether for floors, roofs or core walls. Write us today for complete information about Foamglas, stating your specific problems. There is absolutely no obligation involved. Pittsburgh Corning Corporation, 2264-4 Grant Building, Pittsburgh 19, Pa.



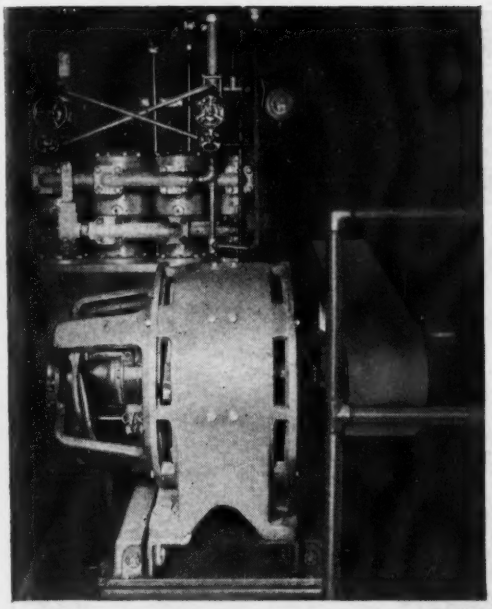
• 3000 POUNDS on a 13-inch square of Foamglas-insulated concrete floor. Foamglas was 4½ inches thick. But even this concentrated load failed to cause the Foamglas to show any evidence of crushing.

PC FOAMGLAS

T. M. REG. U. S. PAT. OFF.

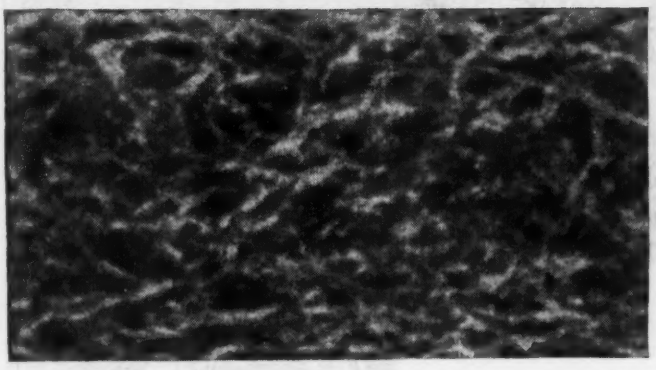
Vaporproof . . . Water-repellant

INSULATION

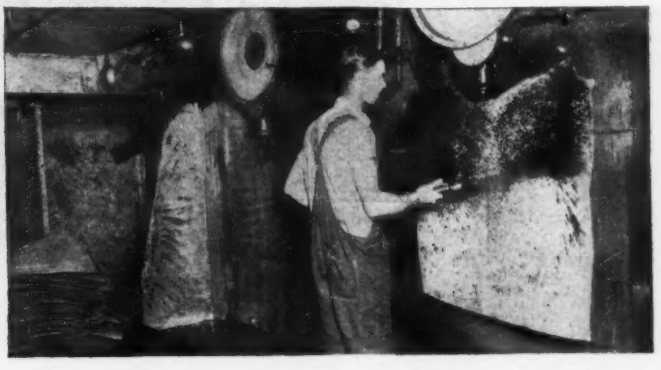


No substitute can equal THIS... for Least Maintenance

As an example of successful change-over to pivoted motor base with flat leather belt drive, this compressor, formerly chain-driven and now belted by a 10½" heavy double "Research" Leather Belt, is reported as operating "with all previous troubles eliminated." 40 H. P. motor, 850 R.P.M., 12" x 12" motor pulley (split fibre lagging over chain sprocket), 36" x 11" driven pulley.



Leather's fibres, interlaced in all directions, give leather belting *resiliency*. Thus *leather*, above all other transmission materials, has the ability to "give" under strain and then "recover". Frequent overloads are handled with minimum slip, without damage to belt, bearings or equipment.



Special "Research" manufacturing processes add a second "plus" to the "plus" you get from any first-quality leather belt — guaranteeing 3% greater production. Exclusive "weight-controlled" curry (shown above) gives maximum pulley grip . . . pre-stretching according to hide characteristics eliminates non-elastic stretch . . . patented "tension-cementing" gives positive ply adhesion strength.

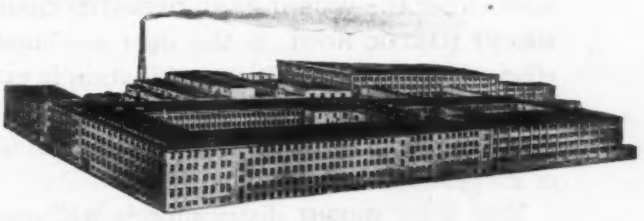
Extra Values from "Research" Belting's

"DOUBLE PLUS"

(all that's *better* in leather, made *best* in "Research")

- **MORE PRODUCTION** with leather belts because of leather's superior traction, which improves with age.
- **MOST PRODUCTION** with "Research" because "Research" processing adds extra pulley grip. 3% more production guaranteed.
- **LESS MAINTENANCE** with leather belts because natural "give-and-take" handles shock loads without undue strain.
- **LEAST MAINTENANCE** with "Research" because pre-stretching removes non-elastic stretch, saving take-ups.
- **LONGER LIFE** with leather belts because leather's tough, interlocking fibres have high resistance to both surface wear and internal friction.
- **LONGEST LIFE** with "Research" because the pre-stretched fibres are properly lubricated by precise, "weight-controlled" currying.

3% MORE PRODUCTION . . . 2 TO 4 TIMES LONGER LIFE . . . FROM "RESEARCH" BELTING'S DOUBLE PLUS



MORE UNIFORM results can be expected from "Research" Belting, manufactured from green hide to finished belt under one roof, under one control, in the world's largest industrial leather plant.

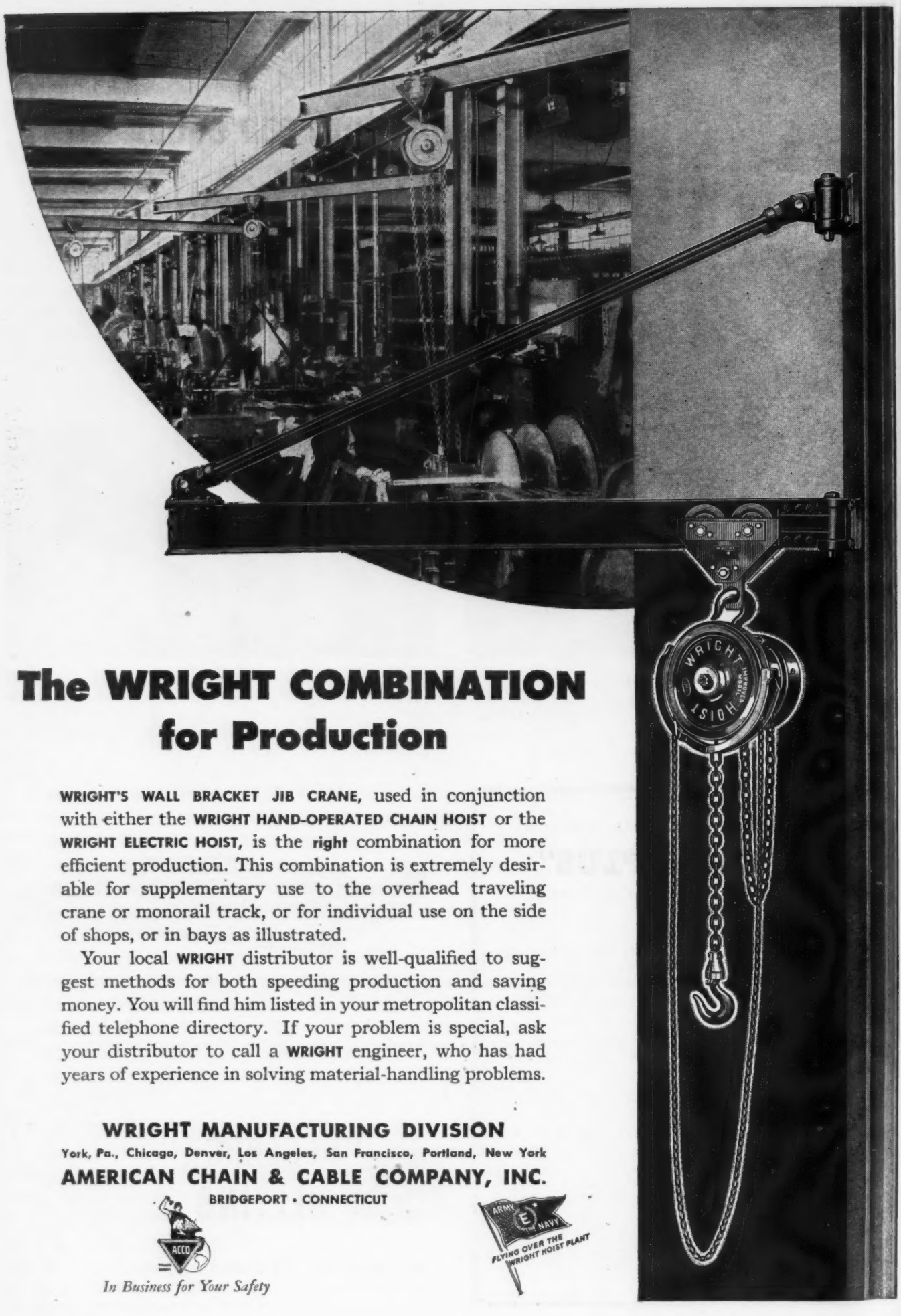
The pivoted-base-flat-leather-belt is the most modern, lowest-cost drive. Write 326 Franklin St., Worcester 4, Mass. for free "Short Center Book".

GRATON AND KNIGHT

"RESEARCH" BELTING

Graton & Knight Company, Worcester 4, Mass.

Branches and distributors everywhere. Look under "Graton & Knight" in "Belting" section of classified telephone directory or THOMAS' REGISTER.



The WRIGHT COMBINATION for Production

WRIGHT'S WALL BRACKET JIB CRANE, used in conjunction with either the **WRIGHT HAND-OPERATED CHAIN HOIST** or the **WRIGHT ELECTRIC HOIST,** is the **right** combination for more efficient production. This combination is extremely desirable for supplementary use to the overhead traveling crane or monorail track, or for individual use on the side of shops, or in bays as illustrated.

Your local **WRIGHT** distributor is well-qualified to suggest methods for both speeding production and saving money. You will find him listed in your metropolitan classified telephone directory. If your problem is special, ask your distributor to call a **WRIGHT** engineer, who has had years of experience in solving material-handling problems.

WRIGHT MANUFACTURING DIVISION

York, Pa., Chicago, Denver, Los Angeles, San Francisco, Portland, New York

AMERICAN CHAIN & CABLE COMPANY, INC.

BRIDGEPORT • CONNECTICUT

ACCO

In Business for Your Safety

ARMY E NAVY

FLYING OVER THE WRIGHT HOIST PLANT

When it can't be left to chance

Alone on the ocean's floor, the Navy diver works with care and precision. Hampered by his cumbersome equipment, beset with innumerable other difficulties, he must nevertheless perform skilled mechanical operations for essential construction. His work must be right . . . nothing can be left to chance.

Nor can chances be taken in the production of Columbia chemicals . . . for so many products are dependent for their standards and efficiency on chemicals which conform in every way to specifications. Columbia is meticulous in its production methods, its tests and inspections. In leaving nothing to chance in its own processes, it eliminates risks for its customers. This is why Columbia is the exclusive source of supply for so many.

COLUMBIA CHEMICALS

PITTSBURGH PLATE GLASS COMPANY
COLUMBIA CHEMICAL DIVISION
GRANT BUILDING • PITTSBURGH 19, PA.

CHICAGO • • • BOSTON • • • ST. LOUIS • • • PITTSBURGH • • • NEW YORK • • • CINCINNATI
CLEVELAND • • • MINNEAPOLIS • • • PHILADELPHIA • • • CHARLOTTE

COLUMBIA SPOTLIGHT

UNUSUAL STRENGTHS are among the numerous advantages obtained in Columbia's new thermosetting plastic, Allymer. Other points of superiority are its resistance to heat, crazing and marring . . . form stability . . . resistance to weather and to solvents, as proved in various critical war materials. Allymer is now available in sample quantities for experimental purposes. You may have research reports and other free data by writing.

ONE FOR RIPLEY—A recent shipment of 60,000 cases of bottled beer to the South Pacific traveled 9,000 miles with the breakage of only 27 bottles! This remarkable packaging achievement of the Glass Container Industry focuses attention on its splendid wartime record. Among the many products destined for export in glass to our fighting men overseas, 1944 requirements call for 678,800,000 beer bottles . . . 50,000,000 bottles for water purifier tablets . . . 98,600,000 insect repellent bottles!

PIG IRON production gets a big boost when high sulphur content can be reduced. Soda Ash has the stuff, chemically, to do it—but the problem is to bring it into sufficient surface contact with the molten iron. Columbia solves it with its Soda Briquettes—compressed pellets composed chiefly of Soda Ash. Added to the ladle at the time the pigs are cast, Soda Briquettes get the surface contact necessary for effective desulphurizing—and reduce expensive dusting losses. A newly prepared folder will be furnished on request.

SODA ASH production records illustrate the tremendous Twentieth Century growth of the nation's chemical industry. A basic chemical for the Glass industry, Soda Ash is also used extensively by the Textile and Paper industries and serves in a wide variety of cleansing operations. In a single month, total U.S. production of Soda Ash now approximates that for the entire year of 1899 . . . and Columbia's own annual production exceeds that tonnage by a substantial margin.

COLUMBIA CHEMICALS include Soda Ash, Caustic Soda, Sodium Bicarbonate, Liquid Chlorine, Silene EF (Hydrated Calcium Silicate), Calcium Chloride, Soda Briquettes, Modified Sodas, Caustic Ash, Phosflake, Calcene T (Precipitated Calcium Carbonate) and Calcium Hypochlorite.

Better LUBRICATION MEANS *Better Maintenance*

• Excessive wear and difficult maintenance often result from inadequate lubrication.

Sinclair provides *LILY WHITE OILS* for *better lubrication* of spindles under all loads, speeds, and continuous operation. *NO-DRIP LUBRICANTS* provide non-creeping, spatter-resistant lubrication highly efficient on top rolls, comb boxes and mechanical drives.

• • •

(Write for "The Service Factor" — published periodically and devoted to the solution of lubricating problems.)

SINCLAIR TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE SINCLAIR REFINING COMPANY, 630 FIFTH AVENUE, NEW YORK 20, N. Y.

ALOYCO STAINLESS STEEL VALVES

MADE OF SOLID STAINLESS FOR MAXIMUM CORROSION RESISTANCE!

16" HYDRAULICALLY OPERATED STAINLESS STEEL GATE VALVE

When a pipeline carries a corrosive fluid, velocity and pressure are also present — and often impact. Since solid stainless steel offers maximum resistance to combined physical forces and chemical action, it is the safest material for corrosion resistant valves. That is why Aloyco Stainless Steel Valves are specified where metallic contamination or leakage cannot be tolerated.

In addition to the SOLID metal throughout, purchasers of Aloyco Valves gain a wide choice of alloys . . . for instance, Chrome-Nickel 18-8S for all around corrosion, 18-8SMO for acetic acid and sulphur compounds, Aloyco 20 for boiling sulphuric acid up to 50% concentration—the higher Chrome-Nickel series—such metals as Durimet, Worthite, Monel, pure Nickel, Hastelloy, and others.

Each Aloyco valve is fabricated with careful attention to correct foundry practice, accurate machining and rigid inspection. Available for pressures up to 600 p.s.i., the wide range of Aloyco models permits practically any piping layout.

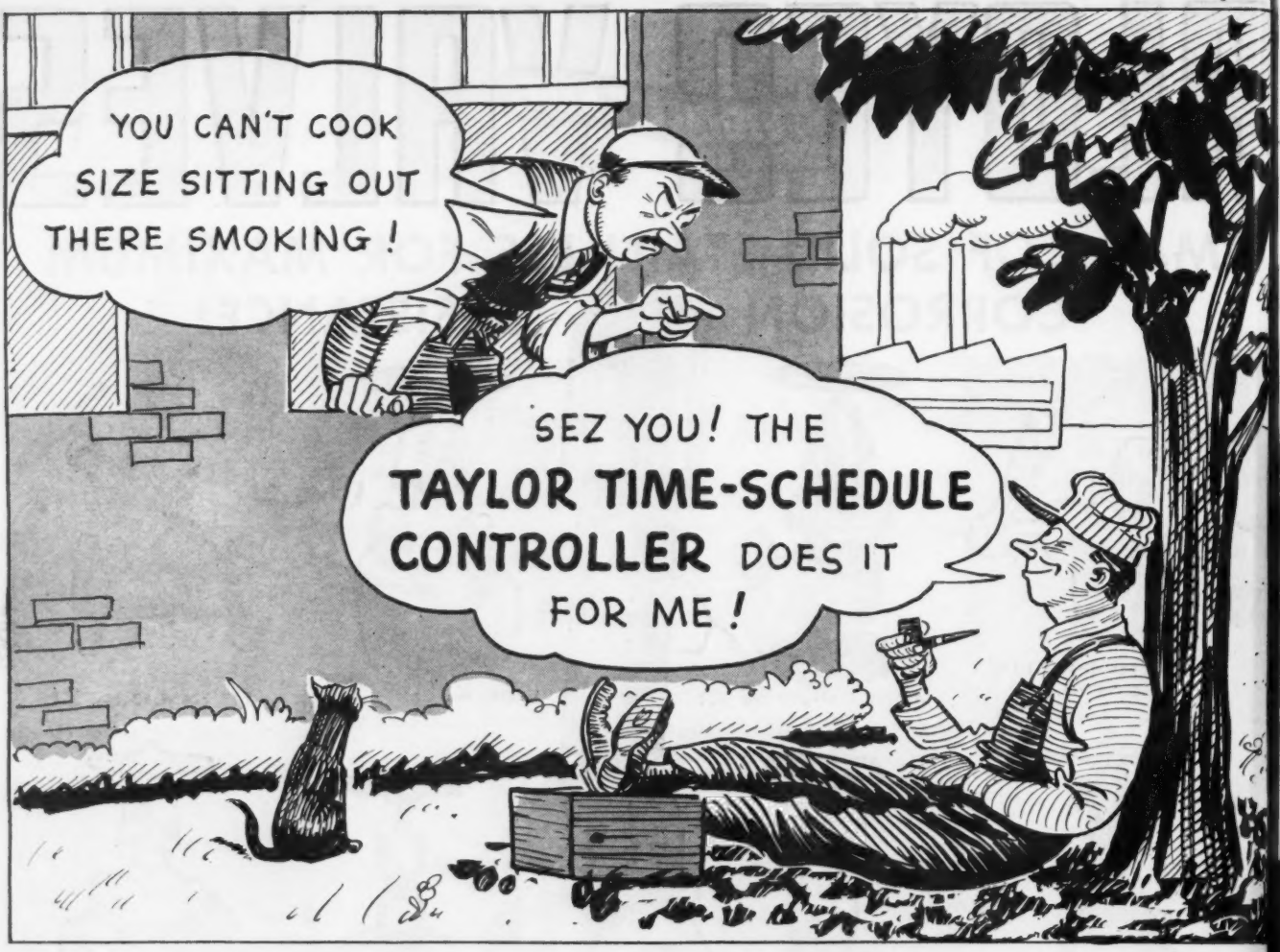
Aloyco valves are supplied for new construction under high priorities and for maintenance and repairs under M. R. O. regulations. Write today for detailed information.

ALOYCO

Stainless Steel
VALVES and FITTINGS

GATE VALVES • GLOBE VALVES
Y VALVES • CHECK VALVES
LEVER THROTTLE GATE VALVES
TANK VALVES • SCREWED FITTINGS
FLANGED FITTINGS
GAUGE GLASS FITTINGS

Alloy Steel Products Company, Inc. 1304 West Elizabeth Avenue, Linden, N. J.



THIS ACTUALLY HAPPENED!

PROBABLY the boss weaver just didn't believe the new Taylor Fulscope Time-Schedule Controller would do all we claim it will. But he found out that once the ideal cooking schedule is determined, it can reproduce each succeeding batch exactly the same, and improve the warps he gets. This precise control system prevents overcooking and overboiling. All you do is load the kettle and push the button. The Time-Schedule Controller does the rest!

Its dual-case construction permits easy accessibility to both control mechanism and cam and trip mechanisms. The addition of Interrupter Timer permits extreme flexibility of rise, hold or fall periods in time schedule with same cam. Available also in double-duty form for control of two related temperatures, pressures, or flows.

Your Taylor Field Engineer can give you the full story. More than that, he can analyze your particular conditions and help you to set up exactly the schedule you need for best results. Write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada. *Instruments for indicating, recording, and controlling temperature, pressure, humidity, flow, and liquid level.*

ARMY E NAVY

Taylor Instruments

MEAN

ACCURACY FIRST

IN HOME AND INDUSTRY

BUY AN EXTRA WAR BOND TODAY!

Here at Niagara...

Covering an area of nearly thirty acres, Niagara Alkali Company's plant at Niagara Falls, N. Y., is one of the most modern and efficient of its kind in the world

• • • WE ARE naturally proud of our more than forty years of pioneering in the field of electro-chemical products. But we feel that the present and future are infinitely more important. Today we are operating with new and expanded facilities to meet the unprecedented demands of war. Tomorrow we will be prepared to use these new facilities and new war-born experience to give even more efficient service to industry.

Niagara ALKALI COMPANY

60 EAST 42nd STREET, NEW YORK 17, N. Y.

CAUSTIC POTASH • CAUSTIC SODA • PARADICHLOROBENZENE • CARBONATE OF POTASH • LIQUID CHLORINE

Caustic Potash · Caustic Soda · Liquid Chlorine

Paradichlorobenzene · Carbonate of Potash

Let us help you *Deliver the Goods!*

UNITED STATES STEEL SUPPLY COMPANY

9 Conveniently Located Warehouses

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Teletype CG. 605 BRUnswick 2000

BALTIMORE (3), Bush & Wicomico Sts., P. O. Box 2036
Teletype BA. 183 GILmore 3100

BOSTON (34), 176 Lincoln St., Allston, P. O. Box 42
Teletype BRTN. 10 STAdium 9400

CLEVELAND (14), 1394 E. 39th St.,
Teletype CV. 153 HEnderson 5750

MILWAUKEE (1), 4027 West Scott St., P. O. Box 2045
Teletype MI. 587 Mitchell 7500

NEWARK (1), N.J., Foot of Bessemer St., P. O. Box 479
Teletype NK. 74 Bigelow 3-5920
REctor 2-6560 - BErgen 3-1614

PITTSBURGH (12), 1281 Reedsdale St., N. S.
Teletype PG. 475 CEdar 7780

ST. LOUIS (3), 21st & Gratiot Sts., P. O. Box 27
Teletype SL. 384 MAin 5235

TWIN CITY, 2545 University Ave., St. Paul (4), Minn.
Teletype STP. 154 NEstor 2821

OUR definite progress towards victory has been made possible by all hands working together and delivering materials to our fighting men. For the bravest men in the world can't fight without weapons and supplies.

Perhaps you need help in turning out war goods—steel, steel products, tools and machinery; if so, get in touch with our nearest warehouse. We have nine of them, located in the big production centers and our men will break their backs to get goods to you in a hurry.

We have large stocks, even today, including the National Emergency Alloy Steels which have proved so successful. Try us—we have helped speed many a war order. Your call will receive quick action. Write, wire or phone our nearest warehouse.

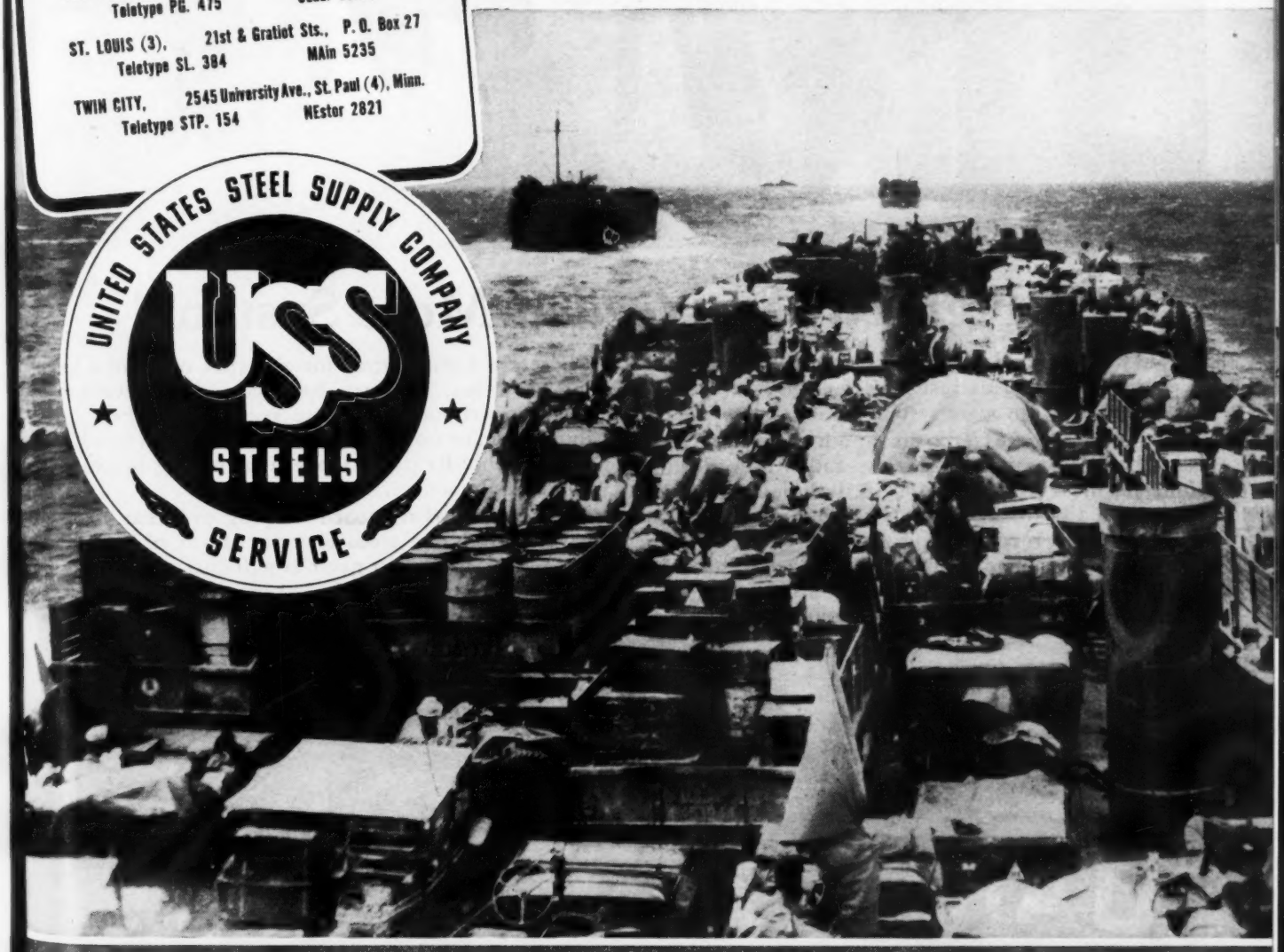
NEED WELDING MATERIALS?

We can supply Welding Wire, for electric arc welding, such as:

STAINLESS STEEL ELECTRODES
HARD-SURFACING ELECTRODES
MILD CARBON ELECTRODES

We also offer Welding Machines, Protect-O-Metal for elimination of weld spatter and Havens "C" Protected Clamps. Write, phone or wire our nearest warehouse.

UNITED STATES STEEL SUPPLY COMPANY
USS
STEELS
SERVICE



UNITED STATES STEEL

"I Figured We Needed More System"

Yes, system is good in any business. But being knee-deep in record forms just isn't the answer. What is needed here is not *more* system . . . but *better* system.

And there's where Uarco fits in. Why? Because Uarco records are more than just forms—rather they are functional business tools, scientifically designed to routinize complicated business procedure. They are continuous forms that end record keeping confusion . . . save time and trouble in every division of the business. There's no more copying and re-copying, with Uarco on the job . . . *one* person at *one* sitting writes enough copies for all departments.

There are Uarco forms for all types of record keeping problems. They are designed for hand-written or machine-written use. These records may be carbon interleaved or non-interleaved, may be used in a Uarco Autographic Register, typewriter, billing machine or tabulating machine.

No matter what record keeping problem you may have, bring it to Uarco. There is a form, or Uarco will devise one, to fit your need. It will cost you nothing to call the Uarco representative today.

UNITED AUTOGRAPHIC REGISTER COMPANY
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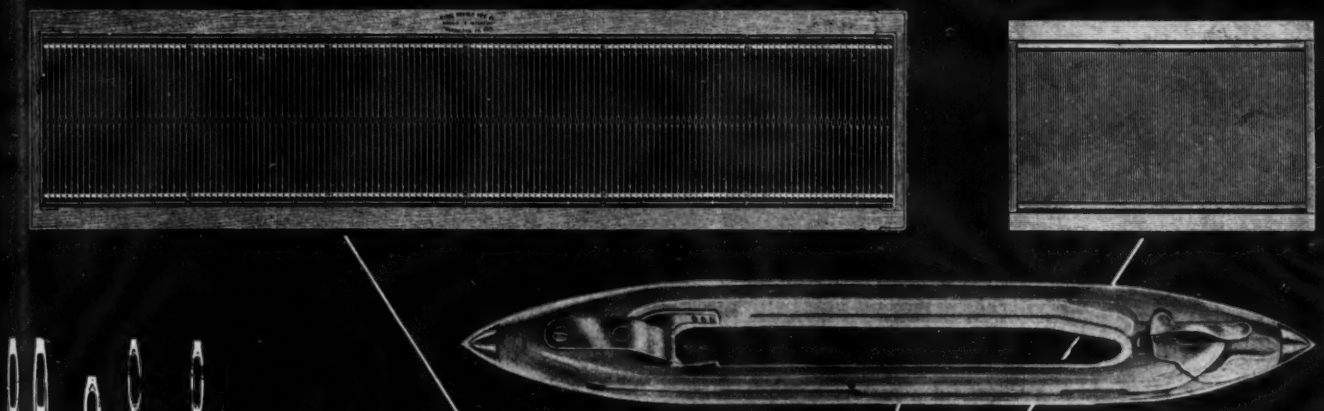

QUALITY LOOM HARNESS EQUIPMENT

Ste-Hed-Co-ize your Loom

for

Perfect Synchronization

of

Equipment used with Material woven

Consult with our Local Field Engineers

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SOUTHERN SHUTTLES DIVISION

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BRANCH OFFICES ALL OVER THE WORLD

Manufacturers of Superior

FLAT STEEL HEDDLES—HARNESS FRAMES—ALL TYPES OF LOOM REEDS—TEMPERED DOGWOOD SHUTTLES—LOOM HARNESS ACCESSORIES

FIELD ENGINEERS IN EVERY DISTRICT

Speed up WITH STAINLESS STEEL EQUIPMENT

IN THIS OPEN RAYON SOAPER—which also handles spun rayon, corduroys and light-weight cotton—vats and rollers made of U·S·S Stainless Steel take care of the sodium hydroxide solution. Not only does this speedier, light-weight Stainless Steel equipment step up production, but easy cleaning saves many hours of down time. This machine can be cleaned quickly by using a steam jet.

TEAMWORK meets present day standards in the processing of textiles. Dye liquor and stainless steel equipment work together to produce brighter colors, greater yardage of higher quality goods. Gone are the bad old days when chemicals in dyebaths rusted the metal, which in turn discolored the dyes, causing off-colors, dulled shades—all of which caused frequent re-dyeing.

This sort of sabotage is prevented in modern high-speed equipment that is made of U·S·S Stainless Steel. The metal does not corrode, pit or deteriorate. Color changes are a matter of minutes, not hours. A jet of steam does the whole cleaning job—without recourse to strong alkalis or stiff brushes—so promptly and thoroughly that color-bleeding—and consequent spoilage—are *eliminated*.

U·S·S Stainless Steels, which are produced in separate plants by experienced men to insure proper composition, handling and heat treatment, withstand the heat and pressure, the speedy operation, the contact with corrosive elements encountered in present-day equipment.

When you are in the market for tanks, piping, agitators, tubs, kiers, rollers, dry cans, any equipment in which cloth touches wet metal, make sure that you specify the sort that is made of U·S·S Stainless Steel. Write for names of manufacturers who make textile machinery out of U·S·S Stainless Steel. They can tell you how this equipment more than pays for itself through savings in labor and cleaning time, reduced spoilage, increased output of higher quality goods. Drop us a line and our technicians will be glad to consult with you regarding your particular problems and plans for the future.

U·S·S STAINLESS STEEL

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York*
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USS

UNITED STATES STEEL

The same...

high quality at low cost consistently maintained in peace and war

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SODIUM HYDROSULFITE

LYKOPON *is a trade-mark, Reg. U. S. Pat. Off.*

3 awards to Rohm & Haas Company and its associated firms, The Resinous Products & Chemical Company and Charles Lennig & Company.

ROHM & HAAS COMPANY

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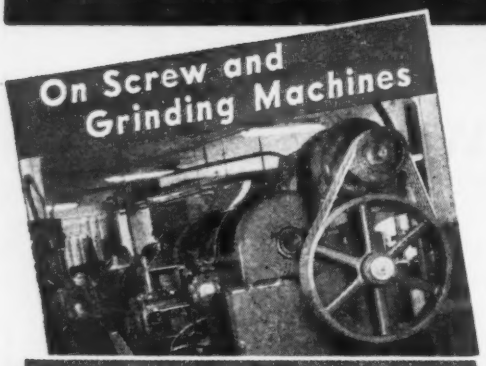
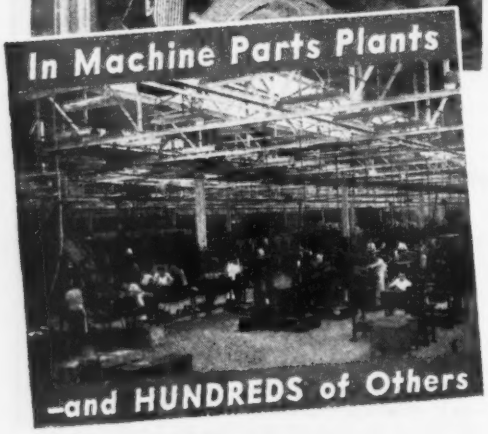
Manufacturers of Chemicals for the Textile, Leather and other Industries . . . Plastics . . . Synthetic Insecticides . . . Fungicides . . . Enzymes

For MORE *than* 6 YEARS . . .

GATES *Synthetic Rubber* V-Belts





—Have Been *OUTWEARING* Any *NATURAL RUBBER* Belts Ever Used!

More than 6 years ago Gates began supplying American Industry with thousands upon thousands of V-Belts made *entirely* of synthetic rubber.

This was long before synthetic rubber came to be used merely as a *substitute* for natural rubber—in fact, Gates chose a very *special* synthetic rubber for the one reason that it is, in many important respects, *greatly superior* to natural rubber.

*** There are, of course, many kinds of synthetic rubber. Gates uses each kind where it best meets some particular service need.**

For example:—one special synthetic rubber which Gates uses extensively in making V-Belts has the ability to withstand oil and heat much better than natural rubber can. Where oil and heat conditions are especially severe, Gates special synthetic V-Belts are giving 3 times to 4 times the service life of any natural rubber V-Belts ever used.

This is the record not of a few belts over a limited period but of thousands upon thousands of Gates synthetic rubber V-Belts installed in hundreds of plants and factories during the past 6 years.

Today, as you know, all industry depends on belts made of synthetic rubber—and that is exactly why Gates' long head-start in fabricating belts of synthetic rubber is so *important* to you *NOW!*

By simply picking up your phone and calling the Gates Rubber Engineer, you can now have, in your own plant, the full benefits of Gates' greater knowledge and experience—a distinct advantage to you in *longer belt life* and in *trouble-free operation*.

THE GATES RUBBER COMPANY

Engineering Offices and Stocks in All Large Industrial Centers

443

GATES VULCO ROPE DRIVES

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DALLAS, TEXAS 2213 Griffin Street
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CHARLOTTE, N. CAROLINA 605 West Fifth Street
GREENVILLE, S. CAROLINA 108 W. Washington Street
ATLANTA, GA. 738 C & S National Bank Building

TO THE TEXTILE INDUSTRY:

Your customers will see this announcement in full color later this month in Saturday Evening Post, Time, Newsweek, U. S. News and Business Week. While it promises nothing for immediate delivery, the developments it describes are already well out of the laboratory stage and well into the mill trial stage for possible military applications. If you would like to have a hand in those mill trials so that you can be among the first to profit from the fast-moving development of new resins and chemicals for tomorrow's textiles, write or wire: MONSANTO CHEMICAL COMPANY, Textile Department, Merrimac Division, Everett Station, Boston 49, Mass.

MONSANTO CHEMICAL COMPANY ANNOUNCES THESE

New Chemical Developments for Postwar Textiles

(AT PRESENT, LIMITED TO MILITARY APPLICATIONS)

WOOLENS THAT WON'T SHRINK!

Imagine woolens that can be washed *right* along with cotton garments—same soap, same hot water, same freedom from "coddling" in the wash—yet emerge *without shrinking!* (LEFT: Untreated woolen sample is pictured at top, Resloomed woolen sample below, each after one washing. Both samples were identical in size before washing.)

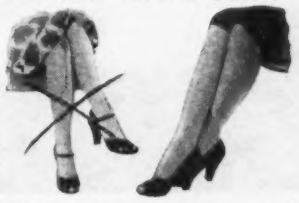
SUITS THAT HOLD THEIR CREASE!

Imagine a worsted suit that can be worn in humid weather—yet remain *creased* and *free from wrinkles!* Or rayons that can be crushed into a ball—yet spring right back into unmarred smoothness! (LEFT: A worsted suit made of fabric treated for crush resistance can be packed for days in a handbag, yet remain presentable.)

GARMENTS THAT FIGHT WEAR!

Imagine playsuits, socks, house dresses, work clothes and many other garments giving *double the wear* you've ever known before! (LEFT: Untreated lightweight cotton shirting at top, worn through after 100 cycles on a Taber Abrasion Tester. Same fabric below, treated for wear resistance, still only slightly worn after 300 cycles under the emery wheel!)

THREADS THAT WON'T SLIP!



Imagine stockings that resist runs even when snagged . . . or fragile fabrics that won't part at the seams under stress! (LEFT: Monsanto's Syton treatment prevents threads from slipping—the cause of runs and ugly shredding in sheer fabrics. Top, untreated material; bottom, same material treated with Syton.)

In response to needs of the military program, Monsanto research laboratories have developed these four radically new developments in the chemical treatment of fibres

. . . *plus* such additional advancements as removal of the shine from serges, increasing the water-repellent qualities of cottons and rayons, shrinkproofing fabrics against washing or dry cleaning.

Yet, without exception, these chemical improvements for natural or synthetic fibres do not change in any way the texture or feel of the fabric.

Today, all these war-born developments are earmarked for military needs. Inevitably, with the postwar transition, they will have a profound effect on the products of the wool grower, the cotton farmer, the textile manufacturer . . . a long step ahead in better fabrics that *you* will be able to buy and use after victory.

MONSANTO CHEMICAL COMPANY, St. Louis 4

MONSANTO
CHEMICALS — PLASTICS
SERVING INDUSTRY WHICH SERVES MANKIND

EXAMPLE OF *Service*:

Adiabatic and Isothermal Compression (page 9) . . . Moisture and Dew Point (page 30) . . . Cylinder Clearance (page 10) . . . Sludge Formations (page 34) . . . These are just a few of the important subjects discussed in our handsome new booklet, AIR COMPRESSOR LUBRICATION.

Clearly illustrated, packed with helpful information, it's free to air compressor owners and their personnel.

Simply write: Cities Service Oil Company, Sixty Wall Tower, New York 5, N. Y.

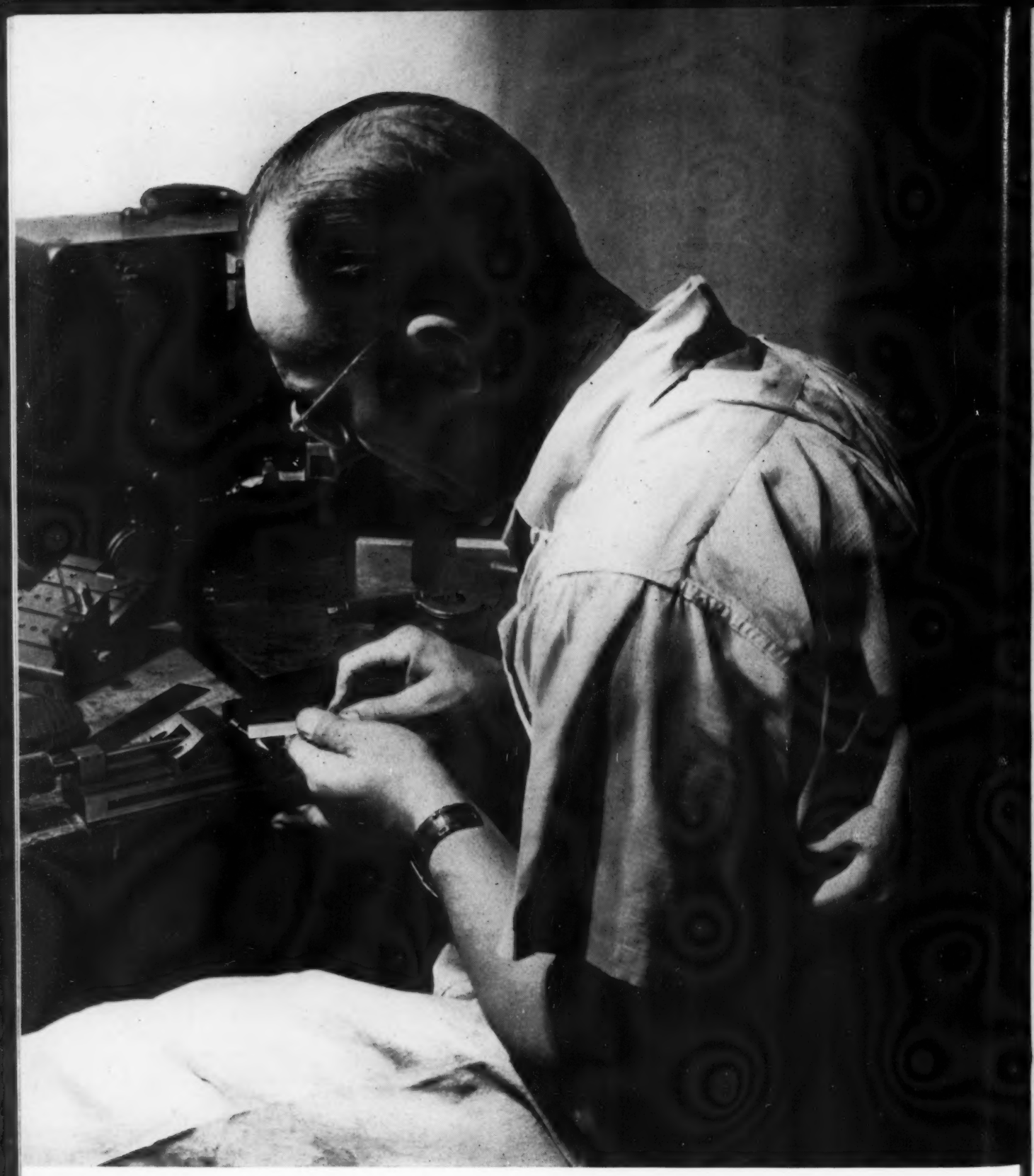
More and more, it's service that counts . . .

and *Cities Service* means *good service!*

CITIES SERVICE OILS
ONCE-ALWAYS
CITIES SERVICE OIL COMPANY
ARKANSAS FUEL OIL COMPANY

Smart Line-Up . . . Only legs clothed in glamorous, even-textured, full-fashioned stockings are eligible to compete in a smart line-up. Every hosiery manufacturer knows that it takes good needles to knit a quality fabric—regardless of the fibre used. Keep your knitting machines young and effective with TMW Needles . . . *And remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

TEXTILE MACHINE WORKS • READING, PA.



"A man at work at his trade is the equal of the most learned doctor."
HEBREW PROVERB

Until the Victory is Won! . . . The men and experience back of Reading Full-Fashioned Knitting Machines are enlisted for the duration. We *cannot* give you new machines — but we *will* do the next best thing: Our engineers will do their utmost to help you keep your present equipment at highest efficiency. *Let us tell you about our complete reconditioning service and what it means in terms of better fabrics and bigger profits.*

TEXTILE MACHINE WORKS • READING, PA.

THE WAR DECORATIONS OF TEXTILE MACHINE WORKS

Bur. of Ord. Flag and Navy "E"
July 25, 1941

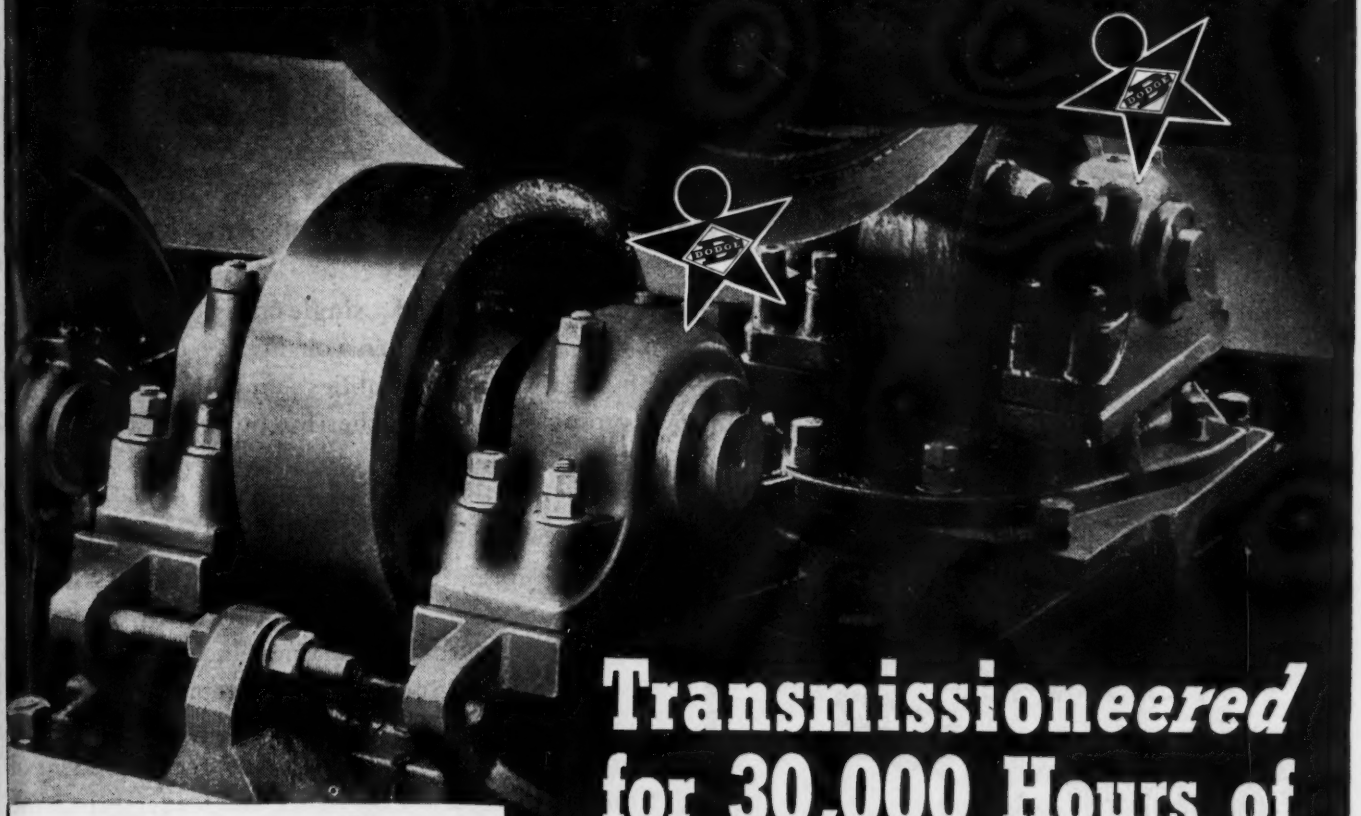
One Star All-Navy "E" Burgee
January 25, 1942

Two Star Army-Navy "E"
July 25, 1942

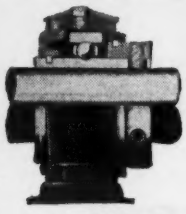
Three Star Army-Navy "E"
January 25, 1943

Four Star Army-Navy "E"
January 11, 1944

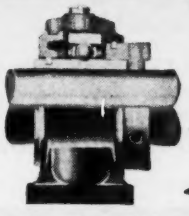
TRANSMISSIONEERED MEANS ADVANCED DESIGN IN POWER DRIVES



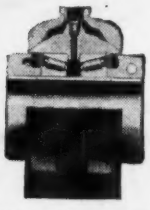
Transmissioneered for 30,000 Hours of Trouble-Free Service



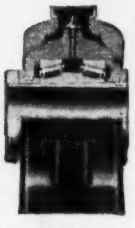
Dodge DH Ball Bearing Pillow Block



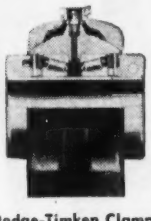
Dodge DH Ironclad Pillow Block



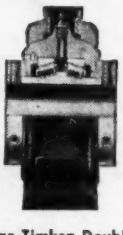
Dodge-Timken Clamp Sleeve Pillow Block



Dodge-Timken Special Duty Pillow Block



Dodge-Timken Clamp Sleeve Type "C" Pillow Block



Dodge-Timken Double Interlock Pillow Block

The Sign of the Dodge Transmissioneer

Rugged Rolling Bearings, Transmissioneered by Dodge for your particular power drive requirements, give you long hours of trouble-free service. Built to accept the challenge of modern peak-production methods — to defy the marauding forces that tear at production efficiency every hour of the working day — Dodge Transmissioneered Rolling Bearings hold your power and maintenance costs to a minimum. Transmissioneering assures you 30,000 hours of dependable performance under conditions for which the bearing is adapted.

Dodge Transmissioneered power drive equipment — Bearings, Clutches, DV Drives, Pulleys and many other items — are obtainable generally from the stocks of the Dodge Transmissioneer, the Dodge Distributor in your area. He can supply you with "The Right Drive for Every Job" — assembled from standardized precision-made equipment that keeps *all* the power on the job. Call your Dodge Transmissioneer.

DODGE MANUFACTURING CORPORATION
Mishawaka, Indiana, U. S. A.

BUY MORE WAR BONDS

DODGE — THE RIGHT DRIVE FOR EVERY JOB

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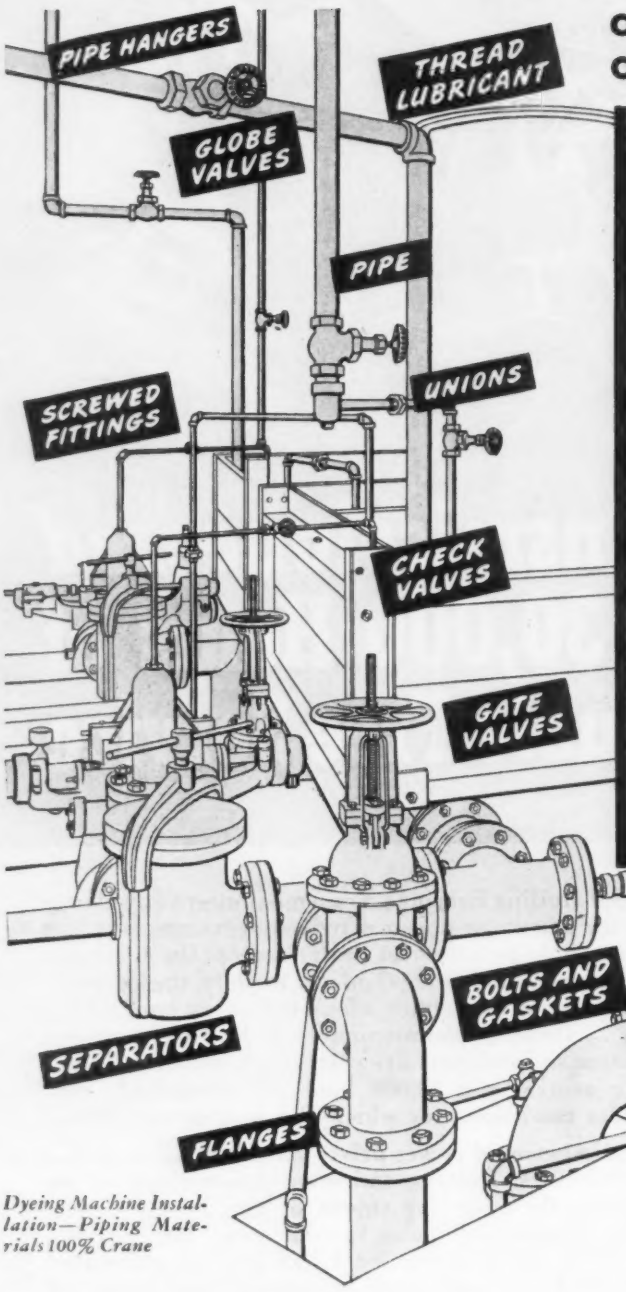
No. 14

DODGE ROLLING BEARINGS . . . The 30,000 Hour Line

For Anything in Piping Equipment ...Just Call Your CRANE BRANCH



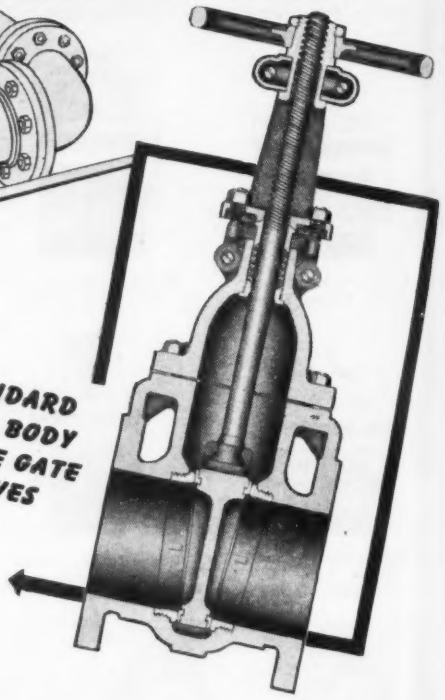
Dyeing Machine Installation—Piping Materials 100% Crane

ONE SOURCE OF SUPPLY . . .
ONE RESPONSIBILITY FOR ALL MATERIALS

WHEN you need a single fitting of any sort—call Crane! Or, when you need valves—fittings—pipe—fabricated assemblies—and all accessories for a piping system. Whether for power or processing installations—high or low pressure—at Crane you get all piping requirements from a *single* source—with the world's largest selection for every service.

Better piping installations start with parts whose quality and craftsmanship are backed by single responsibility. Ordering, maintenance work, storing of parts and getting emergency replacements—you simplify all such procedures by using Crane *complete* materials service. But, mainly, you get full benefit of Crane Co.'s 89-year experience and leadership in the piping equipment field.

CRANE CO., General Offices: 836 S. Michigan Avenue, Chicago 5, Illinois. *Branches and Wholesalers Serving All Industrial Areas.*



ONE STANDARD OF QUALITY

To equip throughout with Crane materials insures one high standard of dependability from end to end of piping systems. For example, in Crane Iron Gate Valves: Strong body sections resist severest strains. Straight-through ports give streamline flow. A deeper stuffing box lengthens packing life. Extra long guides keep disc travel true, while finest design in every part assures smooth, positive operation and long life.

CRANE

VALVES • FITTINGS • PIPE
PLUMBING • HEATING • PUMPS

Gulf Quality Lubricants *in the weave room help reduce staining, wear, power consumption—*

Actual photo of a Gulf Service Engineer checking loom lubrication in a prominent southern mill.

MODERN HIGH-SPEED LOOMS require the proper application of lubricants that provide full protection against excessive wear, and which resist oxidation, gumming, and "throw" to the highest degree. That is why leading mills specify Gulf oils and greases for this equipment—they have learned from experience that these quality lubricants help reduce staining, power consumption, wear and down-time.

With Gulf quality oils and greases, applied as recommended by Gulf Service Engineers, every mill department operates at top efficiency, and maintenance and power costs are reduced to rock-bottom levels. The reasons: Superior lubricating value and long life!

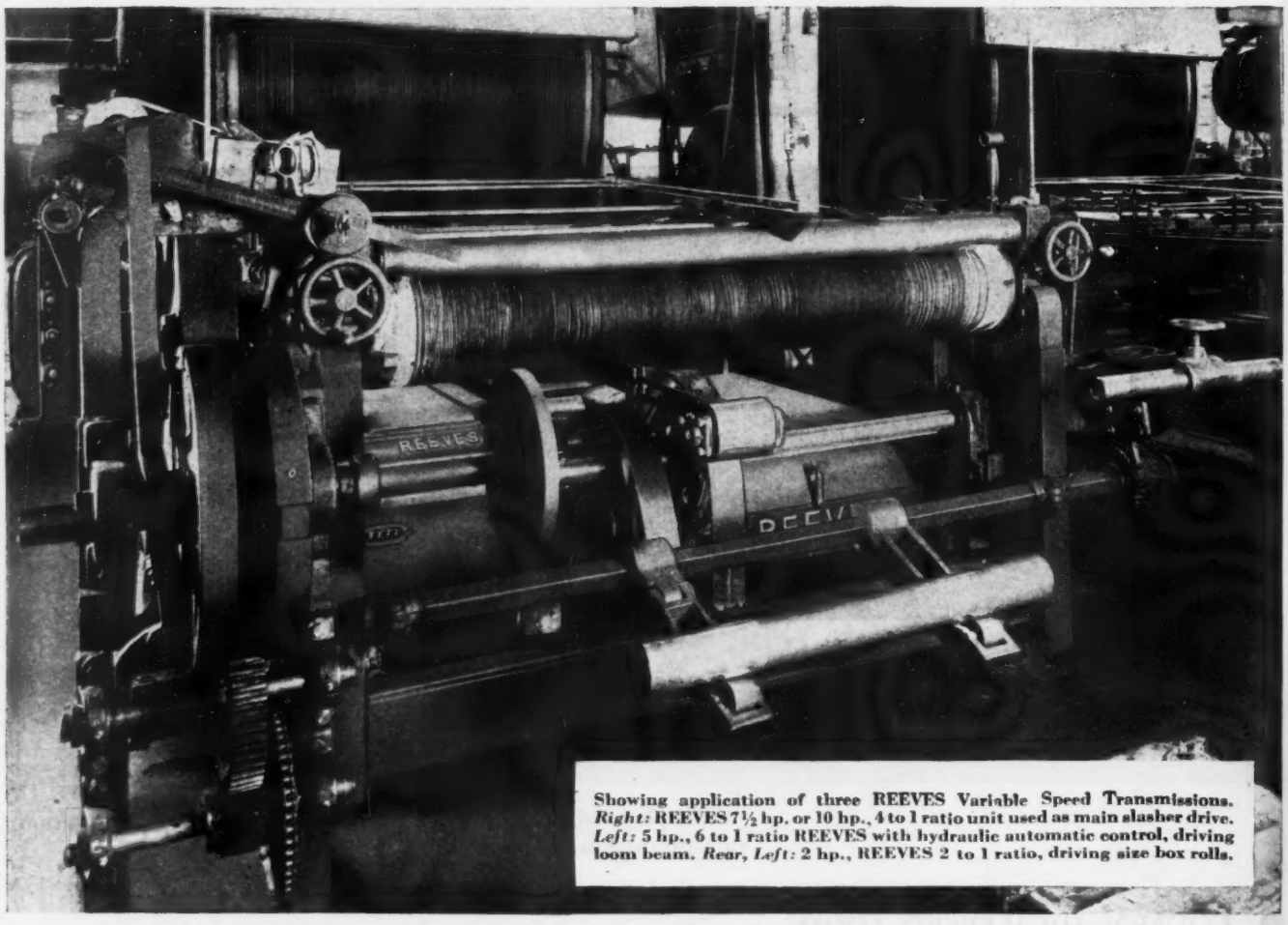
And here's another important plus value you get when you use Gulf lubricants: The helpful counsel of Gulf Service Engineers, specialists in scientific textile mill lubrication. Make sure your equipment is getting the kind of lubrication that insures continuous production and maintenance economies. Write, wire, or phone your nearest Gulf office today and ask a Gulf Lubrication Service Engineer to call.

GULF INDUSTRIAL LUBRICATION

GULF OIL CORPORATION
GULF REFINING COMPANY
GULF BUILDING, PITTSBURGH 30, PA.

BETTER WEAVING

THROUGH MOISTURE CONTROL, STRETCH CONTROL AND TENSION CONTROL IN THE SLASHER . . .



Showing application of three REEVES Variable Speed Transmissions. *Right:* REEVES 7½ hp. or 10 hp., 4 to 1 ratio unit used as main slasher drive. *Left:* 5 hp., 6 to 1 ratio REEVES with hydraulic automatic control, driving loom beam. *Rear, Left:* 2 hp., REEVES 2 to 1 ratio, driving size box rolls.

Apply REEVES Accurate, Variable Speed Drives at Three Critical Points

It is generally agreed among mill men that a large percentage of warp yarns is damaged in the slasher to a degree that materially and adversely affects the operation in the weave room.

Now you can do something about this. You can reduce the breaks and loom stoppage and better the quality of the cloth by making these improvements in the slasher process: (1) Assure the correct moisture content of the warp yarn. (2) Eliminate undue stretch and the resultant weakening of the yarn. (3) Maintain uniform pre-set tension between delivery roll and loom beam throughout the building of a beam to retain the elasticity in the yarn and make a beam of desired density.

All this is accomplished by applying accurate, infinite speed control at three points on the slasher through REEVES Variable Speed Transmissions.

Main Slasher Drive

A REEVES is installed as the main slasher drive. This is a unit with sufficient speed range—usually 4 to 1 ratio—to provide the right speed setting for all sets from lightest to heaviest. The REEVES also assures the very fine speed adjustments that must be made from time to time to keep the yarn from being wound on the loom beam too dry or too wet. These latter adjustments are required by variations in temperature of cylinders and by changes in atmospheric temperature and humidity. They are made by turning the REEVES handwheel.

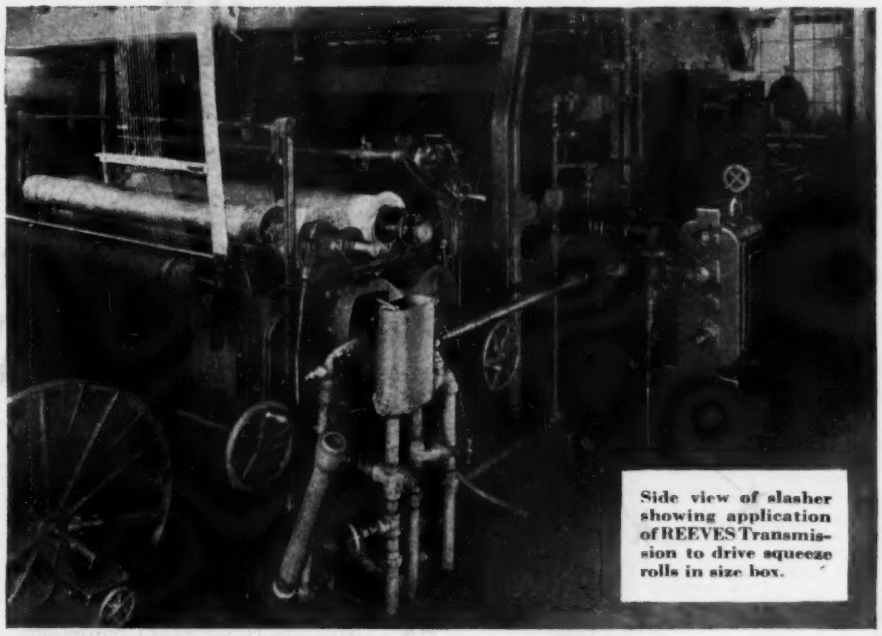
To hold moisture regain within very close tolerances yard by yard, many leading mills are using automatic moisture controls in connection with the REEVES Transmission.

Stretch Control

Most of the yarn stretch in slashers takes place at two places—between size box and cylinders and between delivery roll and loom beam. The greatest percentage is between size box and cylinders where yarn is wet. Some mills have reported as much as 3% to 3½% stretch in the slasher.

Stretch is accurately and continu-

ously regulated through a small size vertical, enclosed REEVES Transmission driving the size box rolls. A section is cut out of the side shaft and additional bearings provided to support the ends of the two sections of shaft. The lower shaft of the REEVES is the input or constant speed shaft and is driven from the side shaft by roller chain, usually a 3 to 1 step-up drive. The top shaft is the variable speed shaft and through a 3 to 1 reduction chain drive is connected to the size box rolls. The REEVES belt then runs approximately level and by turning the hand wheel the r.p.m. of the size box rolls is adjusted perfectly to give precisely the desired tension and stretch of the yarn.



Side view of slasher showing application of REEVES Transmission to drive squeeze rolls in size box.

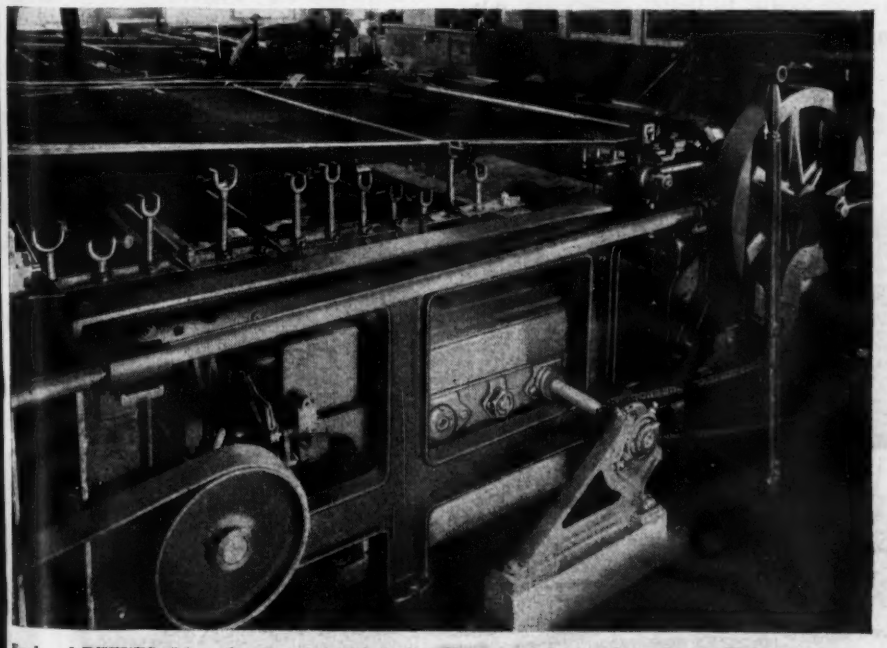
Loom Beam Drive

The loom beam is driven by a REEVES, usually 4 hp., 6 to 1 ratio, with REEVES piston type hydraulic automatic control. The loom beam is moved forward about ¾" to disengage the teeth of the gear on the slip friction from the large gear on the delivery roll shaft. The loom beam is then driven by roller chain, from the variable shaft of the REEVES. The REEVES, through its hydraulic control, automatically reduces the r.p.m. of the loom beam and maintains constant y.p.m. surface speed as it increases in diameter. It holds constant tension on the yarn and makes a beam of uniform density throughout. The control may be set for tension desired on sets to be run; then remains the same until again reset. Operation is automatic and leaves the slasher tender free to give full attention to running of the yarn.

The hydraulic control lever is connected to a very simple follower roll which bears lightly against the yarn on the loom beam. When a full beam is removed the REEVES is changed to high speed and follower roll moves into position to contact new beam when it is started.

Another advantage of this automatic control is that it practically eliminates slippage of the frictions, there being barely enough to hold the desired yarn tension and the per cent of slip is the same at all times. This solves a very annoying and expensive maintenance problem. The friction plates do not heat and wear is reduced to the minimum.

Yarn stretch in the slasher has been reduced to less than 1% when equipped with these three drives, for complete tension and speed control at all points and can be easily and quickly adjusted to as little or as much as is desired. Write us about an application in your plant. Our seasoned engineers are at your service.



Enclosed REEVES, 5 hp., 6 to 1 ratio, with hydraulic control driving loom beam. This shows connections from variable speed shaft to countershaft which drives the loom beam. Gear ratio between countershaft and beam shaft is 3 to 1 reduction. Constant speed shaft of transmission is driven from main slasher shaft and varies when yarn speed is changed.

★

REEVES PULLEY COMPANY

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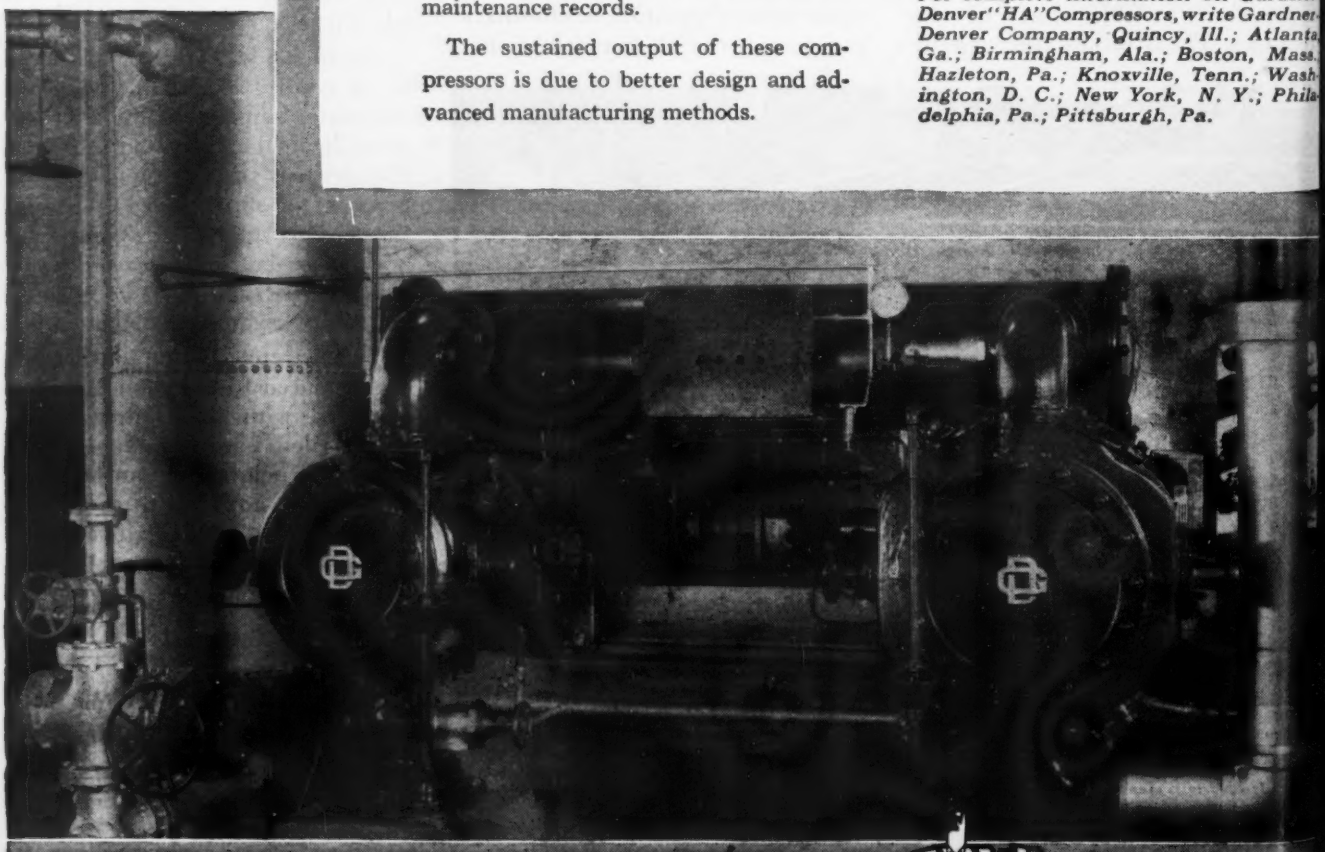

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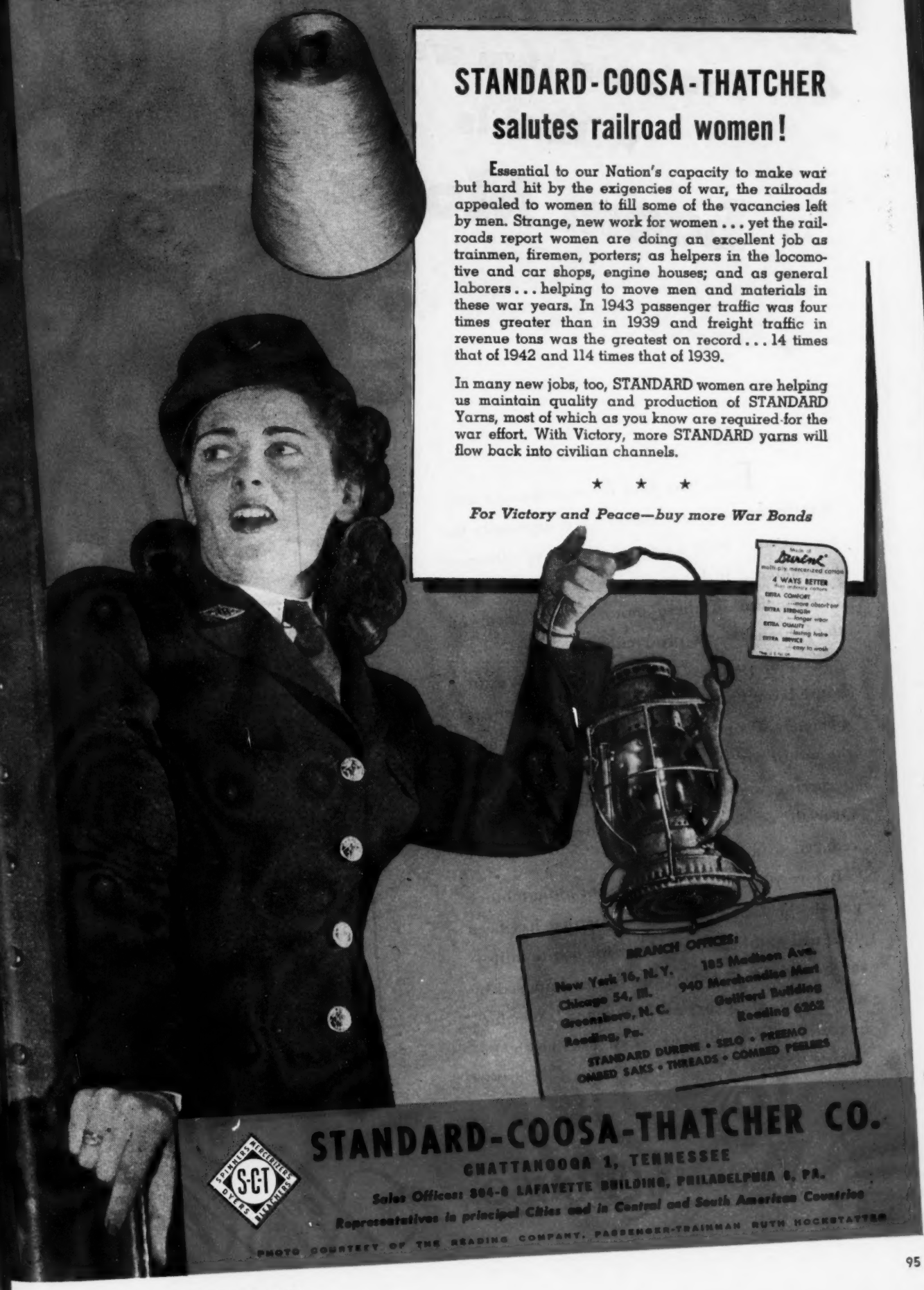

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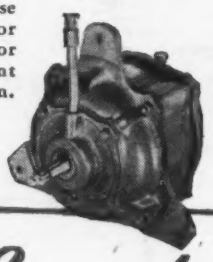
Westinghouse loom motors are particularly adaptable for special applications. There are many possible variations in assembly arrangements including three-point suspension, left and right-hand applications, base mounted, and many others. They can be supplied for all types of special mountings or lubrication requirements.



Westinghouse loom motor designed for three-point suspension.

Westinghouse
PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

Loom Motors

The *Stake* of the United States in Expanding World Trade

WITH the war in Europe racing to a climax, and with a sure pattern for the defeat of Japan already outlined, American business is confronted with the need for an immediate decision on long-term economic policy.

What is this country's foreign trade program to be after the war?

No intelligent appraisal of all the factors any longer can allow us to postpone considering the issue merely because, in the past, foreign trade absorbed barely eight per cent of our production.

Actually, a whole new set of conditions was injected into the picture by the first World War; but we persisted in ignoring these new factors.

Almost overnight, the United States was transformed from the largest debtor nation in the world to the second largest creditor nation. At the same time, we made faster technological progress than any other nation. Thus we created the need for more dollar exchange on the part of the rest of the world and simultaneously made it harder for other nations to earn dollars.

Today, as another, far vaster war is approaching its end, those changed circumstances are magnified. America has new responsibilities—to itself, and to the world.

Our war-inflated industrial capacity cannot be allowed to drop back to prewar levels without causing a domestic crisis which we dare not permit.

And, because so much of the world is geared to the American industrial machine, we can no longer contemplate calmly the repercussions of a largely self-sufficient trade program or of an unplanned foreign trade program. Either would inevitably set the stage for the next world war.

☆ ☆ ☆

If we are going to prepare ourselves intelligently to cope with this new problem, we must acknowledge certain basic principles.

World trade cannot be rebuilt simply by attempting to restore *prewar* flows of goods. The war has so completely changed the economic fiber of many countries that it is necessary to develop *new* trade relationships. The East Indies, for example, may find the demand for their rubber considerably reduced; the United States may, to a large extent, have to cease exporting cotton; Japan will need to find new substitutes for much of its exports of silk; the British will need new markets to replace the income which they formerly derived from their large overseas investments.

We cannot expand markets for our goods, at home or abroad, unless we find ways of buying more supplies from more people at home or abroad, so that they will have more dollars to spend.

And we probably cannot create increasing buying power abroad without first exporting more of our technical skills—our engineers, our production and management men—to build new markets for our own specialties.

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What is needed to rebuild the world's economic system?

1. Most basic of all, of course, are stable governments which command popular support. In the absence of strong governments, currency stability cannot be achieved.

2. Most war-stricken countries, for a year or two, will need rehabilitation loans, because they will require far more raw materials, equipment, and live stock than they can pay for out of current production.

3. Loans, however, are only a stop-gap, though often a necessary one. Far more important than rehabilitation loans will be the creation of better opportunities for war-stricken countries to sell to the rest of the world, particularly to the United States, South America, South Africa, and India. The ravages of war do not completely destroy the ability of a country to sell. Indeed, it is surprising what large supplies of certain commodities war-torn countries have on hand even before devastated industries have been restored. The invading troops in Normandy found shoes almost non-existent, but they found food more plentiful than in Britain.

   Better opportunities for war-stricken countries to sell would create opportunities for them to buy the things they will require to restore scattered industries and depleted farms, and would help those countries to get rid of the exchange controls which are now universal. So long as a country is able to expand its exports only slowly and painfully, and is dependent upon foreign loans to prevent the depreciation of its currency, so long will it carefully preserve exchange controls and other restrictions in imports. That is why large advances, either through an International Monetary Fund or an International Investment Bank, can make only limited contribution to the removal of trade restrictions.

4. Permanent monetary and credit arrangements are needed to protect nations against temporary pressure upon their currencies, to permit necessary changes in exchange rates to be made in an orderly manner, and to assure that governments never again will repeat the "beggar-my-neighbor" policies of 1931 and 1932.

5. Finally, the world needs a reversal of the trend toward economic self-sufficiency, which received a strong impetus from the first World War and an even stronger one from the great depression of the Thirties. This does not mean that the efforts of many raw-material producing countries to diversify their industries should be opposed. During the late Nineteenth Century and the first part of

this century, the international specialization of production was carried too far, with the result that many countries became dependent for a large part of their standard of living upon the export of one or two raw materials—coffee, sugar, rubber, silk, wheat, wool, and meat. Between the two World Wars, however, the pendulum swung much too far in the direction of self-sufficiency. Some densely populated industrial countries of Europe (Italy, France, and Germany) even attempted to become self-sufficient in wheat, fats, and sugar. So limited are the natural resources and technical skills of most countries that each one finds many things which it can produce only at prohibitive costs. Between the extreme specialization of the late Nineteenth Century and the more recent trend toward extreme self-sufficiency, a happy medium should be sought.

☆ ☆ ☆

What role should the United States play in reconstructing the world's international economic system?

There are those who suggest that the United States be a more or less permanent Santa Claus. They believe that an excess of exports could be financed only by "loans"—loans that would eventually turn into gifts, after producing bitter controversy over why the "debtor" country did not meet its obligations. The persons who assert that full employment can be provided only by an excess of exports are in effect saying that our economy cannot become self-supporting. That is a confession of economic defeatism which a young and vigorous nation should not be willing to make.

The most immediate contribution which the United States can make to world reconstruction is to make itself prosperous.

Prosperity here means a large demand by our industries for imports. The more we import, the easier will it be for foreign countries to meet their large and urgent needs for goods. In 1939, with a gross national product of $100 billion, our imports were $3 billion. After the war, with 55 million people employed and a gross national product of $155 billion, our imports would be about $7 billion or $8 billion.

Not only should the United States make itself prosperous, but it should *keep* itself prosperous. *So important is the United States in the world economy that a depression here is bound to produce a disastrous drop in the price of raw materials throughout the world and to throw most countries into an economic tailspin.*

The United States should support the principle of a large fund to protect the exchanges of the world from temporary pressure. We should not permit differences over the details to prevent its establishment in ample time to be available during the critical period when war-stricken countries will need goods far in excess of their immediate ability to pay for them. *Some* arrangement, even though imperfect in details, will be infinitely superior to no arrangement.

Finally, the United States should take the lead in breaking down barriers to trade. We are the logical country to do this, partly because of our immense domestic market, and partly because for most of the last twenty-five years this country has been able to sell other countries more goods than they have been able to sell to us. One of the greatest contributions which the United States could make to a sound and expanding world economy would be to bring our imports, as soon as practicable, up to our exports. *In other words, the United States, in the long run, should be hard to borrow from but easy to sell to.* The United States should implement this policy (1) by continuing the negotiation of reciprocal reductions in duty, and (2) by accepting exchange rates which make foreign currencies cheaper in dollars than they were in 1939. So great will be the world's need for goods that we can be sure that any dollar exchange earned by sales to us will be converted into American-made goods and will lead to larger exports.

Time was when the United States obtained about eight per cent of its standard of living by sending goods abroad and bringing back other goods. Before the war, however, we were getting less than five per cent of our living by international trade. If, after the war, we were gradually to raise the proportion of our standard of living obtained by trading with other countries to ten per cent of domestic production, our imports would be about $15 billion or $16 billion a year. Our people would be able to buy many things which they now cannot afford, and scores of countries which export raw materials and luxury products would feel the stimulus of rapidly expanding markets. Their expanded demand for road building machinery, mining machinery, machine tools, agricultural implements, locomotives, railroad cars, electrical equipment, trucks, automobiles, and a multitude of products of our factories would create a million or more additional jobs in our factories.

Although the United States would raise its standard of living by increasing its imports and its exports, it should honestly face the fact that the resulting shifts in production and employment would temporarily be painful for some people. The increase in imports would be in commodities which other countries can produce for less than the cost at which much of our output is produced—such as sugar, wool, copper, some fats and oils, wines, winter vegetables and fruits. The increase in our exports would come from those industries in which our superiority is greatest—particularly the manufacturing industries. Finally it would be advantageous, to the country as a whole, to shift a million or two workers from agriculture, where they earn about 60 cents an hour at best, to manufacturing, where they earn better than 80 cents an hour.

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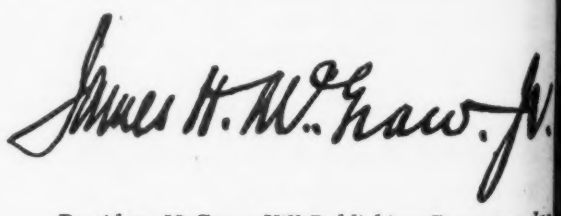
The very fact that in economic matters the rest of the world is dependent upon the United States, exposes our country to great demands and to envy and misunderstanding. The United States must be willing to help the rest of the world, but its help should take the form of assisting other countries to help themselves. Never in all history has one country had such an opportunity to give the world a rising standard of living, to foster conditions under which peace flourishes. What greater tragedy could there be than to make the sacrifices which we are now making and fail to seize this chance to create a world of hope and opportunity in which the spirit of goodwill among nations is able to flourish.



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Recommendations to any mill thinking about Automatic Bobbin Winding

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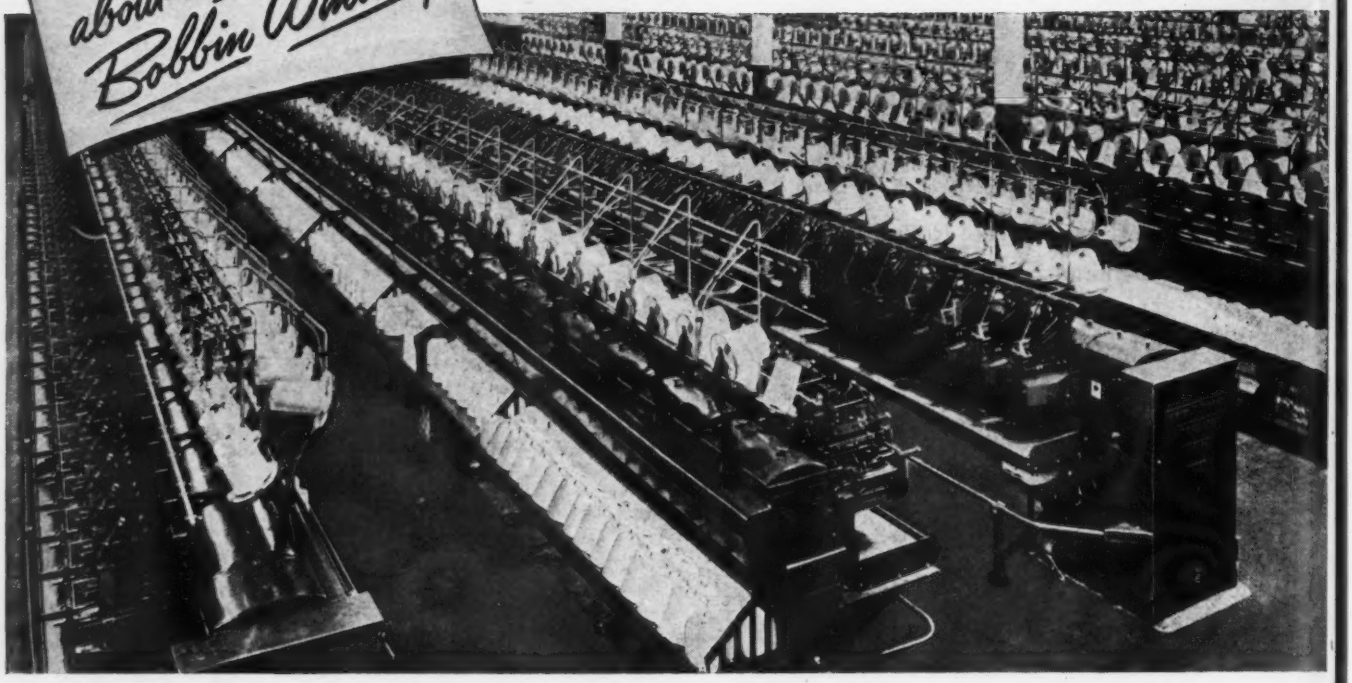

All 3 Features of Successful Automatic Bobbin Winding are Combined in the UNIVERSAL AUTOMATIC Alone!

Mills experienced in winding loom bobbins on automatic machinery will undoubtedly agree that complete success —highest production, lowest maintenance, most satisfactory quality—cannot be obtained without these 3 features:

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2 a combination of mechanical *and electrical* controls
3 a yarn traversing method building parallel-sided bobbins

MAXIMUM PRODUCTION. On the Universal Automatic, all spindles are gear-driven from a rotating shaft. With slip eliminated, there is no loss in speed between shaft and spindle.

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The **UNIVERSAL AUTOMATIC** has proved successful over a period of years winding rayon yarns for the loom. Orders for after-the-war delivery are now being accepted for winding all fibres.

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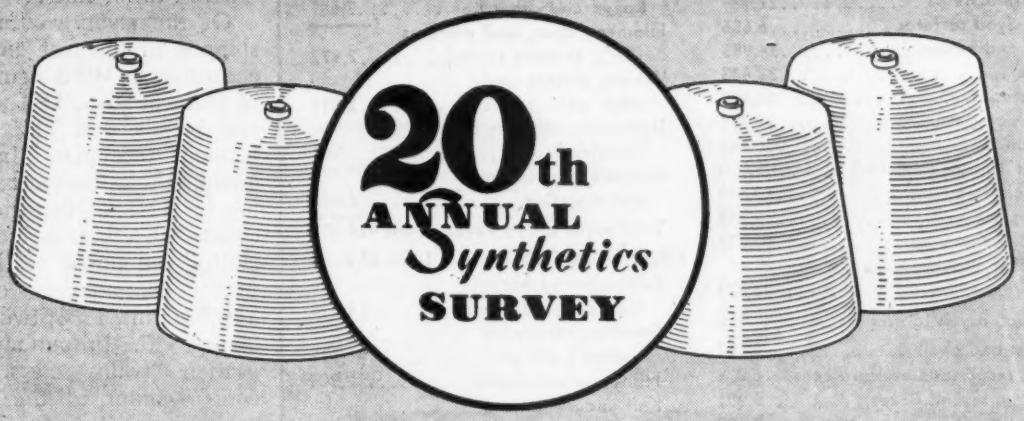


HIGHLIGHTS: ***Rayon Used in Tire Cord May Be 33% of Rayon Production by End of 1944; —Tricot Expansion Foreseen—New Uses and Improved Fibers Promise Steady Increase in Rayon Volume After War—Filament Yarn Now Accounts for 71% of Woven Fabrics; Spun Yarn, 18%; Combinations, 11%—Total Rayon 1944 Production to Top 700,000,000 lb.***

By WILLIAM B. DALL
Managing Editor, TEXTILE WORLD

TOTAL PRODUCTION in the United States of all rayon for 1943 was 656,000,000 lb., and for 1944 will exceed 700,000,000 lb. The war-vital use of rayon in tires may soon consume as much as one-third of this total production, since most of the 240,000,000 lb. of high-tenacity yarn is being allocated to this use in 1944. Actually only about 60,000,000 lb. of rayon tire cord was shipped in 1943, about 10% of total production at that time.

Despite the greatly increased use in hosiery during the last three years, the largest amount of rayon still goes into woven goods. This situation is likely to continue into the postwar period, since the rayon distribution figures for 1943 gave weaving the large majority of 75% against 21% for knitting, and 1944 gives no indication of being very different. Even when silk and nylon were still available, say 1939, the percentage was 80 for weaving and 18 for knitting. The missing 4% in 1943 and 2% in 1939 cover yarn for export and miscellaneous use. These figures are for "rayon" only, as authentic figures on nylon, Vinyon, Saran, Fiberglas, etc., are not readily available.

TRICOT TREND. There are long-range trends which indicate changes of use within the knitting and weaving groups, but the relation between the two may not be much changed unless the expected boom in tricot fabrics proves decisive enough to weigh the balance in favor of knitted materials.

That total consumption of all synthetics is on the upswing is more important to producers and to most users than are the detailed fluctuations within branches of the market. To many individual users, however, the detailed changes are vital. For example, the tricot vogue is first making its impress on the field of women's lingerie, but its ramifications may well take on significance for makers of numerous types of woven fabrics. Tricot developments—economic, technical, and mechanical—are covered in articles which follow, the broad importance of which is clearly evident.

The women's hosiery field has settled to a production of about 40,000,000 doz. pairs of full-fashioned goods annually, requiring about 28,000,000 lb. of yarn. A currently reported estimate of fiber distribution in this branch of the field postwar is a third each for nylon, rayon, and silk. The possible swing to "bare-leg hosiery" may bring seamless to greater importance in the women's field, a turn which would favor nylon against the other two fibers because of the practicality of shaping by boarding and the generally better fit which nylon's great elasticity provides.

TIRE-CORD TREND. In weaving yarns, the item of greatest current importance is utilization of rayon in tire cords. What proportion of postwar tires will be of rayon construction is a moot point. However, rayon will surely play an important part in this field, since one must give great weight to the War Department's belief that rayon is superior in most tires for heavy service, such as Army car and truck. Nylon, of course, is finding a place for itself in airplane tires, where resistance to landing shock is more important than is low extensibility. Made possible by high priorities and availability of government funds, a number of large rayon tire-cord plants have been erected during the last nine months. These are engineered for maximum efficiency and equipped with ultra-modern machinery. Their set-ups are interesting as foreshadowing postwar plant possibilities. Such projects are described in articles which follow.

Possibily at a later time some synthetic other than the high-strength

PRODUCTION OF ITEMS MADE FROM RAYON

(in first quarter 1944)

BROAD WOVEN GOODS —1000s of yds.	
100% filament-rayon fabrics	
Total	295,812
Tie fabrics (all types, 51% or more rayon)	3,795
Bright viscose taffetas	11,914
Pigment viscose taffetas	22,934
Acetate taffetas	22,449
Cross-dyed taffetas	6,656
Twills and serges	34,985
Satins	38,533
Flat crepes	20,152
French crepes	19,758
Canton crepes	1,662
Sheers (incl. georgette)	8,010
Marquisettes	10,640
Ninons and voiles	8,248
Combination crepes	40,337
All other, incl. parachute fabrics	45,377
100% spun-rayon fabrics	41,350
Poplins and challis	5,757
Twills, serges and bedford cords	16,079
Linen types and flakes	5,901
Plied-yarn fabrics	3,900
All other	9,713
Filament and spun-rayon fabrics	37,691
Fujis	11,317
Shantungs	7,403
All other	18,971
Mixtures (51% or more rayon)	40,352
Rayon and wool	6,859
Rayon and cotton	25,832
Rayon and other fibers	7,661
Filament, spun, and mixtures (51% or more rayon)	2,972
Velvets, plushes and other pile	2,011
Upholstery, drapery and tapestry	961
Estimate to cover mills not reporting	6,432
Total rayon broad woven goods	424,609

KNITTED GOODS	1000s of dozs.
Full-fashioned hosiery for women (doz. prs.)	†8,818
Seamless hosiery for women (doz. prs.)	†1,838
Half-hose and slacks	†2,909
Knit underwear and nightwear (doz. garments)	*3,171
Knit fabric gloves circular and warp (doz. prs.)	*333

CONSUMPTION OF RAYON

(in first quarter of 1944)

	1000s of lbs.
Rayon broad woven goods	101,579
Filament	73,211
Spun	28,368
Tire Cord and fabric (filament)	20,843
Narrow woven goods	10,400
Woolen and worsted industry staple and rayon waste	15,229
Full-fashioned hosiery (viscose and cupra)	†7,000
All other hosiery (viscose and cupra)	†3,200
All hosiery (acetate)	†2,100
Underwear, outerwear and other knit	†14,031

* Last quarter 1943. † Average quarterly figure based on all of 1943.

Figures from W. P. B., "Rayon Organon", Dept. of Commerce.

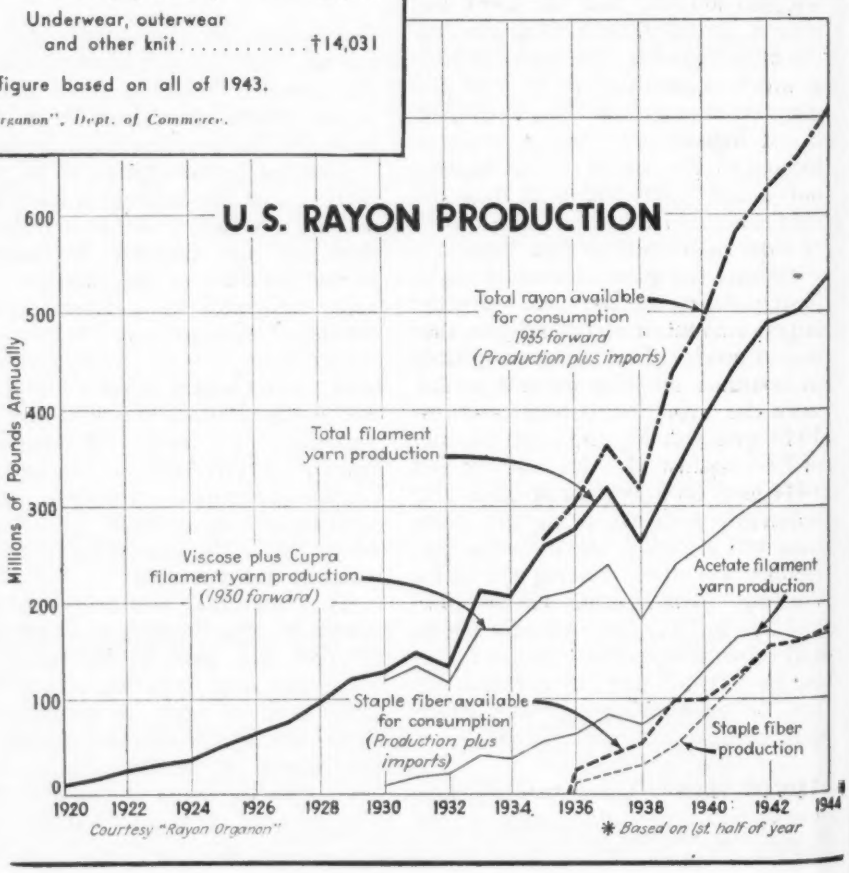
FLOOR COVERINGS. Rugs and carpets offer another field for development of "tailor-made" fibers. Already excellent rayon-face rugs have been manufactured. In one list of 1944 offerings by 22 carpet mills, 12 included rayon items, most of them being blends, with the 50% wool-50% rayon favored. Two to three years ago only a few of these companies were offering rayon lines.

Of the rayon woven broad goods shipped in the first quarter of 1944, according to WPB figures, 71% were of filament yarn, 18% of spun staple and blends, and 11% of combined filament and spun. In the filament group, taffetas bulked largest, accounting for 22% of that group; a classification "all other, including parachute cloths" amounted to 15½%; crepes, 14%; combination crepe fabrics, 13½%; satins, 13%; twills, 12%; sheer fabrics, 9%. In spun rayons the classification "twills, serges, and bedford cords" comprised the largest single group, accounting for 37%. Of the mixtures, those with cotton were most frequent, being 64%, with wool, 17%; with other fibers, 19%.

Rayon production is expected to move on to new high records after the war, limited at first to available capacity and later by whatever building program the industry may regard as sound and well-considered at the time.

rayons will emerge to take the lion's share of the tire-cord business. Certainly the characteristics essential for the best performance of a yarn in a tire carcass are well understood, and the synthetics industry's response to this sort of challenge has always been positive and constructive.

In the general-fabric field there are numerous similar challenges, such as development of better fabrics especially adapted for the various new plastic coatings; of crease-resistant, cool fabrics for summer wear; of insulating fabrics for cold-weather wear, or for blankets; of mechanical fabrics for screens, filters, etc. These problems are by no means new or without some solution, but better solutions may now be in the laboratory to be launched as part of the reconversion, reemployment drive which will follow the war. These solutions will mean greater volume for synthetics.

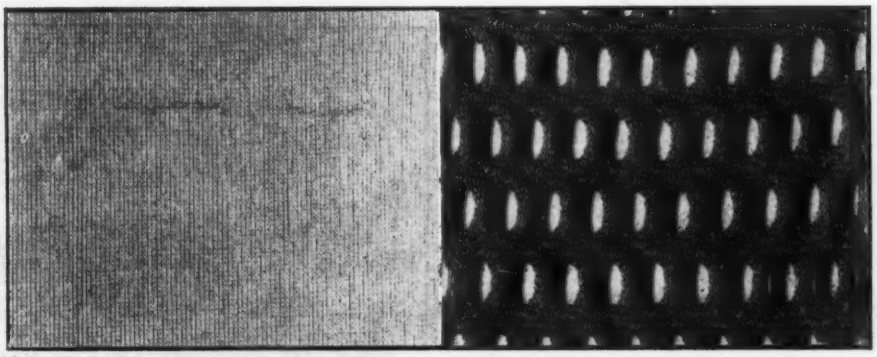


20th ANNUAL Synthetics SURVEY

Tricot—a MAJOR DEVELOPMENT in Synthetics

HIGHLIGHTS: Synthetic Yarns and High-Speed Machines Main Factors in Impending Expansion—Current Yardage Small—Fabric Cost Reaching New Lows.

By THOS. H. JOHNSON
American Viscose Corp.



Jersey and net represent two simple, basic tricot fabrics in volume producton.

THE CURRENT widespread interest in tricot knitting is based on increasing realization of the potentialities in this method of cloth fabrication.

In order to understand more clearly the changing aspect of this industry, a brief history of its existence will be helpful.

The first of the tricot machines in this country came from Europe where the industry was started. During World War I, domestic machines were produced by several builders, who for the most part copied British and German machines. Glove fabrics, and to a lesser degree underwear fabrics, both made of silk, were the chief items during this period.

The advent of rayon yarns helped to revive somewhat the industry which slumped after the war when importation of fabric gloves from Europe was resumed. The tricot operation, however, remained on the whole a small and relatively unimportant part of the textile business until marked improvements in machine design made their appearance seven or eight years ago. It was at this point that the full significance of the possibilities of the tricot process began to be realized. Domestic machine building was revived and in a comparatively short time the industry doubled in size.

During this early period in tricot, the chief items of manufacture were rayon fabrics for women's underwear and dresses, rayon or cotton ladies' glove fabrics, and corset cloths of rayon and cotton.

WIDER FIELD COMING. It will be seen that the distribution was confined to extremely narrow channels in the broad flow of textile merchandise. In the future, in addition to wider outlets in women's wear, new vistas for tricot fabrics should open up men's wear, and in household and even industrial uses.

It is estimated that about 100,000,000 yards of rayon tricot fabrics for the dress, underwear, and glove trades were knitted in 1943. To this should be added about 50,000,000 yards of cotton fabrics for use in camouflage and mosquito nettings, gloves, and corset fabrics. When this seemingly imposing total is measured against an over-all fabric production of 13-14,000,000,000 yards, the present status of tricot knitting is seen in its true relationship to the textile industry as a whole and the scope of its future possibilities is indicated.

EXPANSION FACTS. That further expansion is inevitable is borne out by the following facts:

1. Even at the speeds obtained on machines delivered just before the present war, the cost of producing tricot fabric reached a new low point. With further advancements in machine design and with the attainment of mill efficiencies comparable to other branches of the textile industry, tricot knitting should become one of the cheapest known methods of converting yarn into fabric.

2. Having thus established the economic soundness, it becomes a matter of developing marketable fabrics. To anyone who realizes the tremendous versatility of the tricot machine in producing a wide range of fabrics from many different sizes and types of yarn, the ability to provide new and practical cloths is unquestioned. The fact that the most popular tricot construction today is the well-known "Jersey," (probably the simplest and oldest of all tricot stitch patterns) serves only to strengthen confidence in the future when the full capabilities of the machine will be understood and exploited.

In the past, the tricot business has consisted chiefly of the manufacture of specialized fabrics for use in definitely limited fields. In view of points (1) and (2), it is reasonable to conclude that the industry in the future will be in a position of having sufficiently low costs to permit its participation in broad markets that were formerly closed to it because of costs that were high compared with other methods of cloth fabrication. By reducing or eliminating this disadvantage, the economy of tricot knitting will stimulate the designing and construction of fabrics that should bring about substantially wider distribution of tricot fabrics.

20th ANNUAL Synthetics SURVEY

Tricot MACHINES and FABRICS Feature Two-Bar Designs

HIGHLIGHTS: Four Domestic Machine Builders Enter Field—Others Expected—Wide Range of Fabrics Possible—Early Emphasis on Synthetics—Let-off, Take-up, and Settings Receiving Special Attention—All Models Are to Operate at High Speeds.

By C. W. BENDIGO
Assistant Editor, TEXTILE WORLD

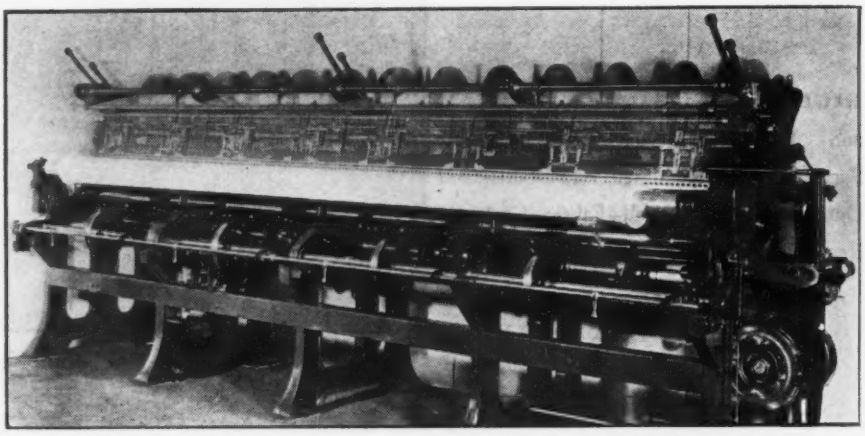


Fig. 1. Whitin machine shown here is to be superseded by improved models.

THE COMING IMPORTANCE of tricot fabrics in the textile field is emphasized by the entrance of at least four important companies as builders of tricot machines in this country. Several of these machines are announced here for the first time. Other parties are known to be interested in the development and building of tricot machines which probably will swell the total number of domestic builders.

Without a doubt, major emphasis is being placed on two-bar machines for use with synthetic fibers. Machine lengths seem to be standardized at 84 and 168 in.; and gages, at 28 needles per inch. On all of these machines the principle of stitch formation is identical, although all of them differ in regard to settings, let-off devices, take-up devices, attachments, and general adjustments. This does not mean that other machine lengths and other machine gages will not be built, but rather indicates what is being contemplated for the immediate future. Machines are in operation in this country (most of them built abroad) with gage as coarse as 14 needles per inch and as fine as 32 needles per inch. Some machines are as wide as 190 in.; but none are known to have been produced under 84 in., with the possible exception of experimental models. It is interesting to note that none of the machines being offered now or in the near future will be identical to the models offered before the war.

WHITIN MACHINE. Whitin Machine Works informs TEXTILE WORLD that it has completed plans to build an entirely new model replacing its Model B. Details of the machine are not yet available, but it probably will be based on the Model B machine, incorporating its better

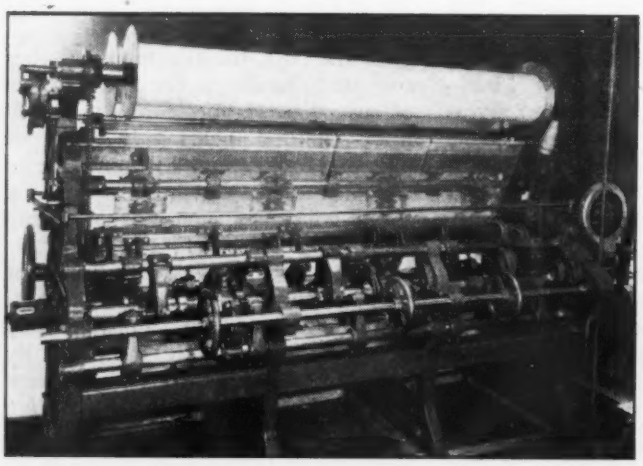


Fig. 2. This Hofmann Simplex machine knits a double-faced tricot fabric.

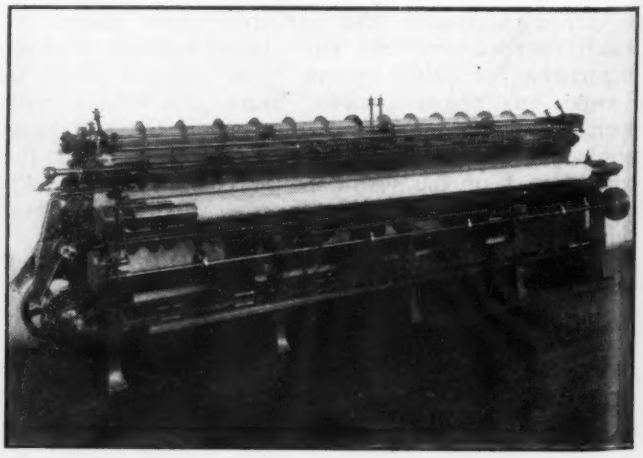


Fig. 3. A Reiner tricot machine to be announced soon will supplant this S & R type.

features. An interesting part of the Model B machine is a metallic brake lining which is the result of a war development. The brake lining is made of sintered metal and will not glaze, become affected by oil or moisture, and will not freeze. It is used on a let-off of the friction type. Another interesting feature of the Model B machine is that acting and following cams are cast as a unit, and this keeps them continuously synchronized. In addition, the knitting cams are counterbalanced when cast. Fig. 1 shows the Model B Whitin machine, which currently is operating at 325 motions a minute. It is expected that the new model, when produced, will increase this speed.

HOFMANN MACHINE. Alfred Hofmann has already entered into the tricot picture with a double-tricot or Simplex machine shown in Fig. 2. Illustrations of double-woven rayon jersey cloth and Atlas cotton cloth knit on Alfred Hofmann machines appear in Fig. 8. The double-tricot machine is produced in 30 and 32 gage; but it is expected that the regular two-bar tricot machine which Hofmann will shortly produce will be 28 gage and will be either 84 in. or 168 in., depending upon the width of fabric desired. The double-tricot machine features a patent let-off which involves the use of planetary gearing with two sets of brakes, one acting as a warp brake and the other acting as a clutch brake. Another patented feature of the machine is an end plate against which all bars are oriented, so that variations in temperature have a limited effect, if any, on its operation. The prewar Hofmann Simplex machine is to be completely redesigned, as production is resumed. Many of the features of the double-tricot model will be incorporated in the regular two-bar tricot, which—due principally to fewer working parts—will be a somewhat simpler machine than the double type.

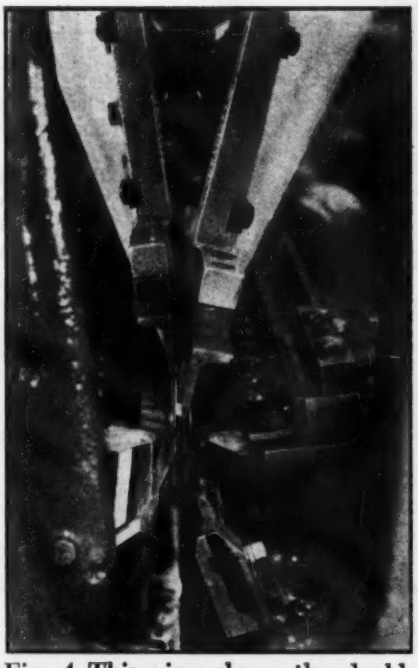


Fig. 4 This view shows the double sets of knitting bars used on double tricot machine.

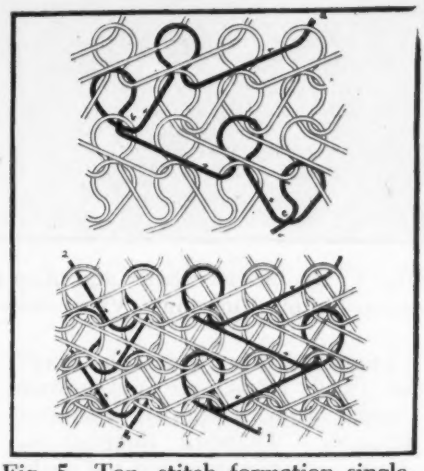


Fig. 5. Top, stitch formation single-bar run-resistant tricot jersey; bottom, run-proof two-bar. *Courtesy Bemberg*

REINER MACHINE. Robert Reiner, Inc., before the war had been supplying the Reiner S & R tricot machine, Fig. 3. This firm now advises TEXTILE WORLD that it expects shortly to be in production on a new machine manufactured in its plant at Weehawken, N. J. The machines will be of the conventional 28 gage and will be offered in 84 in. and 168 in. widths. It will utilize a chain-link pattern wheel and will have other distinctive features. Following a private showing of the machine, details will be announced.

AVECO MACHINE. As was announced some time ago, American Viscose Corp. has acquired the rights of the Collins Loom Works and has changed the name to Aveco, Inc. It intends to place an improved tricot machine on the market. At present one experimental model is being developed, but details have not been released.

VARIETY OF FABRICS. The most interesting thing about tricot machines is the variety of fabrics which can be produced on them. These range from blankets through outerwear material to the finest type of underwear and mesh cloth. Fig. 6 shows three cloths which can be produced with the same tricot pattern wheel merely by changing the threading. The fabric illustrated in A has every needle filled from both beams. The fabric marked *B* has every needle filled by the yarn from the bottom beam, but from the top beam one

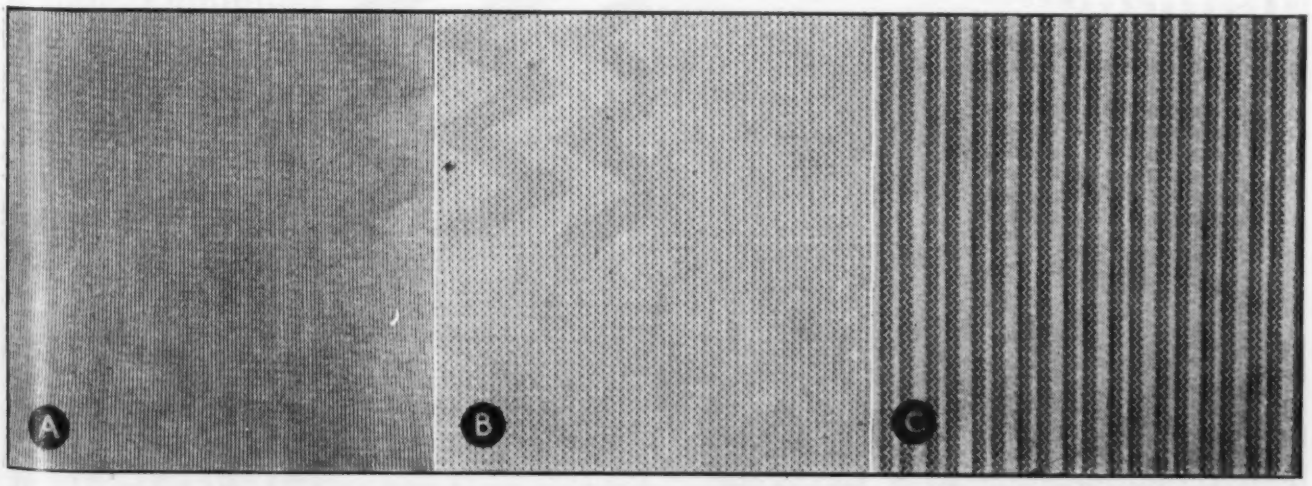
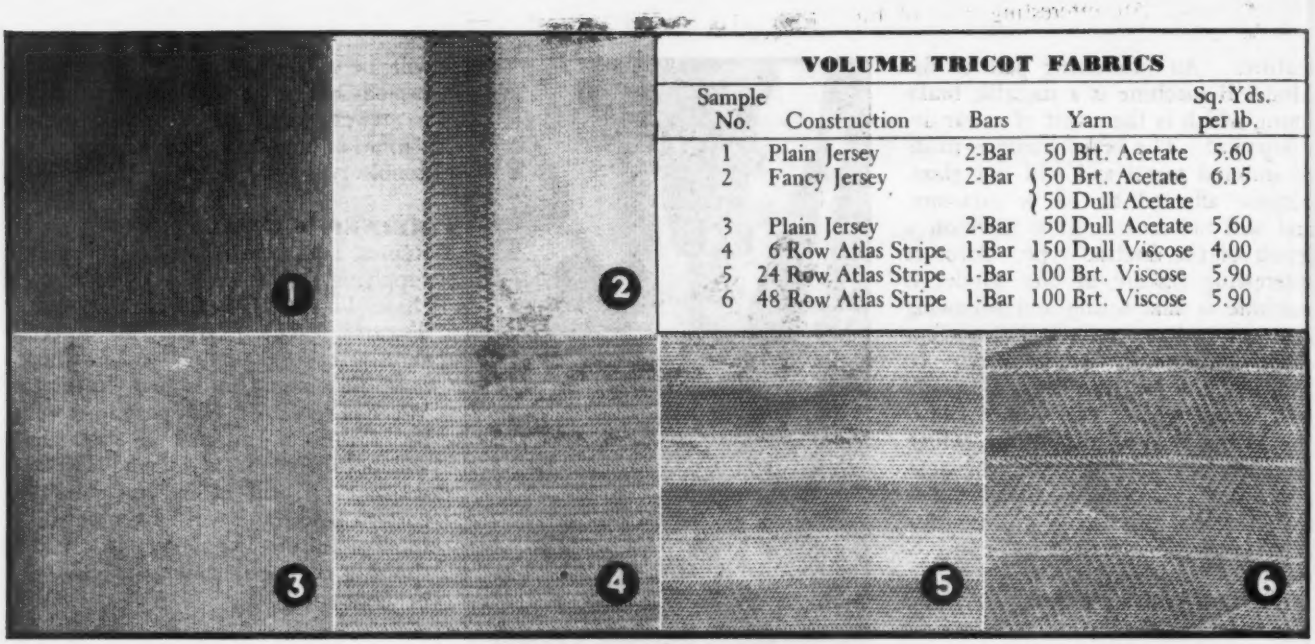


Fig. 6. **These three tricot cloths can all be made with same pattern wheel merely by varying the threading of one beam. Additional threading variations can be made to produce an almost infinite number of different patterns.**



VOLUME TRICOT FABRICS

Sample No.	Construction	Bars	Yarn	Sq. Yds. per lb.
1	Plain Jersey	2-Bar	50 Brt. Acetate	5.60
2	Fancy Jersey	2-Bar	50 Brt. Acetate 50 Dull Acetate	6.15
3	Plain Jersey	2-Bar	50 Dull Acetate	5.60
4	6 Row Atlas Stripe	1-Bar	150 Dull Viscose	4.00
5	24 Row Atlas Stripe	1-Bar	100 Brt. Viscose	5.90
6	48 Row Atlas Stripe	1-Bar	100 Brt. Viscose	5.90

Fig. 7. Among the more popular commercial tricot constructions are the six shown above.

thread guide is left empty and two guides are threaded the entire width of the fabric. The fabric shown at C has all of the thread guides filled from the bottom beam; but from the top beams four threads are in, two out, then two are in and two more out, repeating across the width of the fabric. In each case the bottom pattern wheel is 1-0, 1-2, while the top wheel is 2-3, 1-0.

Fig. 7 and table illustrate some of the more common commercial cloths on the market today, while Fig. 8 illustrates two types of double-jersey tricot fabrics. Fig. 9 shows only a few of the many fabrics that can be produced from synthetic yarn. Tricot fabric can be both screen printed and roller printed in addition to all of the various knitted designs.

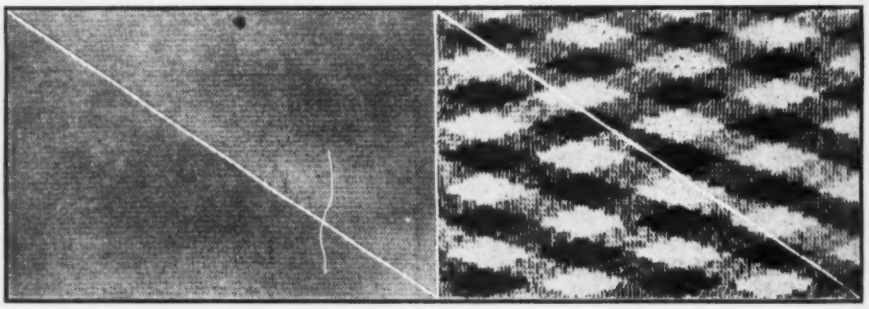


Fig. 8. Double-faced fancy and plain rayon jersey shown were knit on double tricot (Simplex) machine. Views show both sides of fabrics.

In general, it can be said that single-bar tricot fabrics are run-resistant, whereas two-bar fabrics are completely run-proof. Domestic three-bar machines are not expected on the market in the near future, and therefore three-bar fabrics are not illustrated. In general, the main use of the third bar (or a cut-presser attachment) is to permit extreme variations in design. Of course, single-bar fabrics can be knit on two-bar and three-bar machines.

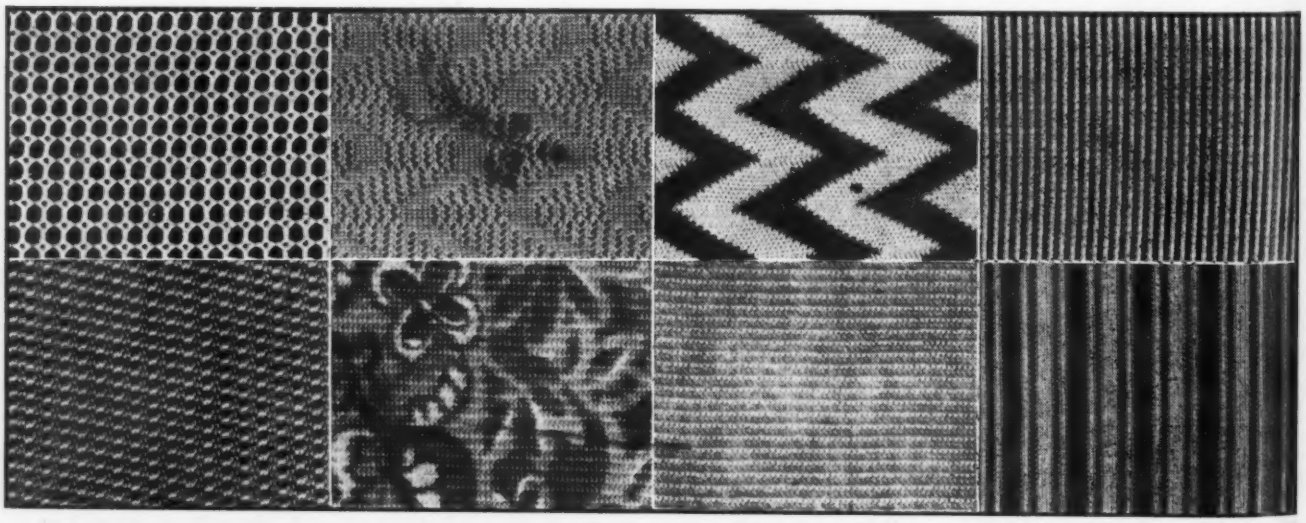


Fig. 9. Only a very few of the many tricot fabrics that can be produced are shown here. All these are two-bar types.

20th ANNUAL Synthetics SURVEY

Tricot KNITTING TECHNIC Starts With Warping

HIGHLIGHTS: Late Development Is Purchase of Yarn on Beams—Threading Done by Hand—Machine Adjustments Affected by Temperature.

By OTTO ENGLEHARD, M. E.

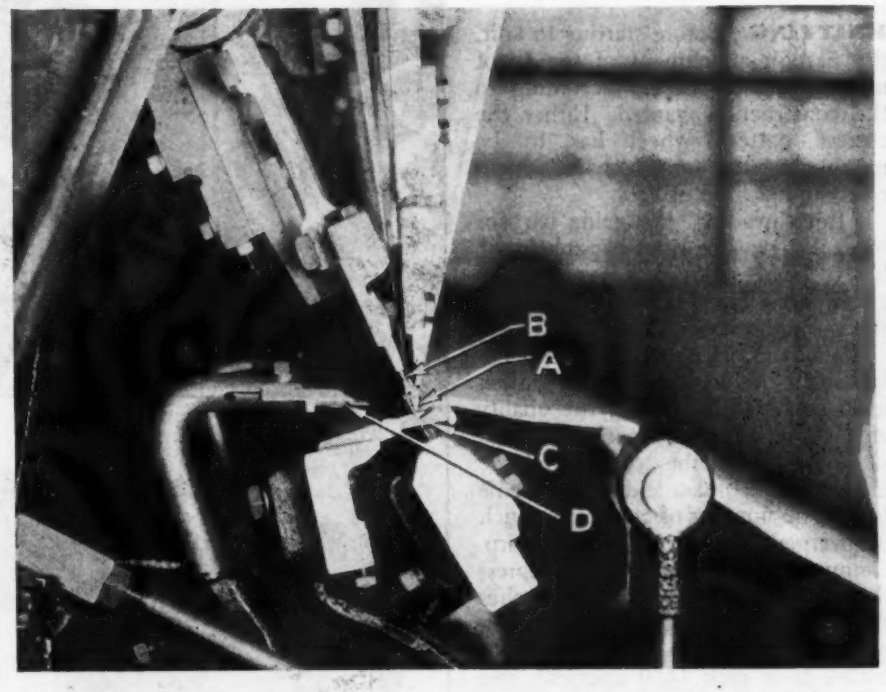


Fig. 1. View shows elements that form tricot stitch: A, needles; B, guides; C, sinkers; D, presser.

Courtesy Whitin Machine Works

PROGRESS made during recent years in developing new and better man-made fibers and the invention of new alloy steels will undoubtedly have a big effect in improving the existing designs of high-speed tricot machines.

Manufacturing tricot fabrics from synthetic yarns consists of only three operations: warping, threading, and knitting. This simplicity is one of the many advantages tricot knitting has compared with other ways of producing cloth.

WARPING. The tricot knitter may obtain his warps in any of three ways. The oldest way is to warp on a pin-type warper and then to rebeam. This method is currently being replaced by direct warping, which means that the yarn is warped directly on sectional beams. A still later development is the purchase of yarn directly on section beams.

The yarn on tricot section beams is not slashed or rebeamed. The sectional beams are merely mounted on a common shaft and are then put on the knitting machine.

Regardless of which method of warping is used, several factors have an important bearing on the quality of the ultimate fabric—or, in some cases, on the question as to whether or not a fabric can be knit. Probably most important is to have all sections of uniform diameter. The need for this is obvious. Another important factor is to have all threads warped with approximately the same tension to avoid defects that might show up only after dyeing.

Lost ends are particularly serious, since practically no tricot machines employ stop motions. A lost or broken end can knit slack for a considerable distance and thus cause defective cloth.

Knots usually cause no difficulty unless several come up together, as at a break-out during warping. When break-outs occur in warping, the knots should be distributed.

It is also important that the warped threads be spaced correctly when a section is papered; otherwise difficulty will be encountered when entering the warps on the tricot machine. Of course, such items as mixed yarns and defective yarns must be guarded against.

The beaming and rebeaming type of warping has some disadvantages as well as advantages. This method not only takes longer but also is not very good for the yarn. The less one handles yarns, the better-quality fabric one gets. Direct beaming cuts out one operation but has a disadvantage in that it limits designing of new styles. The repeat of each design should be divisible in the number of threads warped on one sectional beam. Style limitations are ever greater when yarn is bought on section beams, but the rayon producers have beaming developed so well that their yarn usually runs better than that warped at the mill. In addition, of course, money is saved. Buying yarn on section beams reduces the number of operations in tricot knitting to two: threading and knitting.

All experiments to avoid warping altogether and work directly from the creel into the knitting machine have not been very successful.

THREADING. Threading still has to be done (to the writer's knowledge) by hand. There exists no automatic threader for tricot machines. The latest threader handles 7 in. of needles at one time. The threader consists of a 7-in. section of spring-beard needles or hooks set at an angle in a handle. The whole 7 in. is pushed through the same length of

guides; and then the papered warp ends are quickly laid in the needles, which engage the threads and draw them through the guides. Often a dauber is used to space the threads properly as they are pushed down for the needles to engage.

The operation is so fast that mechanical methods such as are used in weaving are probably unsuited for threading tricot.

KNITTING. Before starting to knit, the pattern attachment of the tricot machine has to be set according to the construction wanted. Either the correct pattern wheel has to be mounted or the correct chain, whichever the machine utilizes.

After threading, the guide bar (or bars, if a two- or three-bar machine) has to be set in such a way that the guides are all in the centers between the spring needles.

Then, the timing of the presser bar has to be set according to the stitch used. After this is done, the quality of the fabric has to be checked and set by adjusting the tension and the movements of sinker and spring-needle bars. The number of courses per inch is governed by the let-off of the warp. Common terminology is to express this in terms of the number of inches that 480 courses will knit. For example, 8-in. cloth has that number of inches to a rack (480 courses) and could be expressed as 60 courses per inch. Incidentally, 8-in. cloth would be a high quality for 2-bar 75-den. jersey.

One of the problems in knitting tricot fabrics is controlling the number of courses per inch. A method of control that has been very successful involves the measuring of the length of yarn knitted in a predetermined number of racks. This is done, usually, by running a thread from a cone across the machine and down into the fabric. At regular periods the thread is marked; and then, after a predetermined number of racks have been knitted, the length of yarn consumed is measured. By reference to how much should have been knit, the knitter knows whether the let-off must be adjusted or not to maintain the type of cloth desired.

TEMPERATURE INFLUENCE. High-speed tricot machines often use an aluminum guide bar which is subject to great thermal expansion or contraction, certainly when a section 168 in. long is considered. If the knitting-room temperature changes during the day, the guide bar expands or contracts accordingly and has to be reset again. Otherwise, the cloth would contain pinholes. A similar condition exists when a cold machine is started.

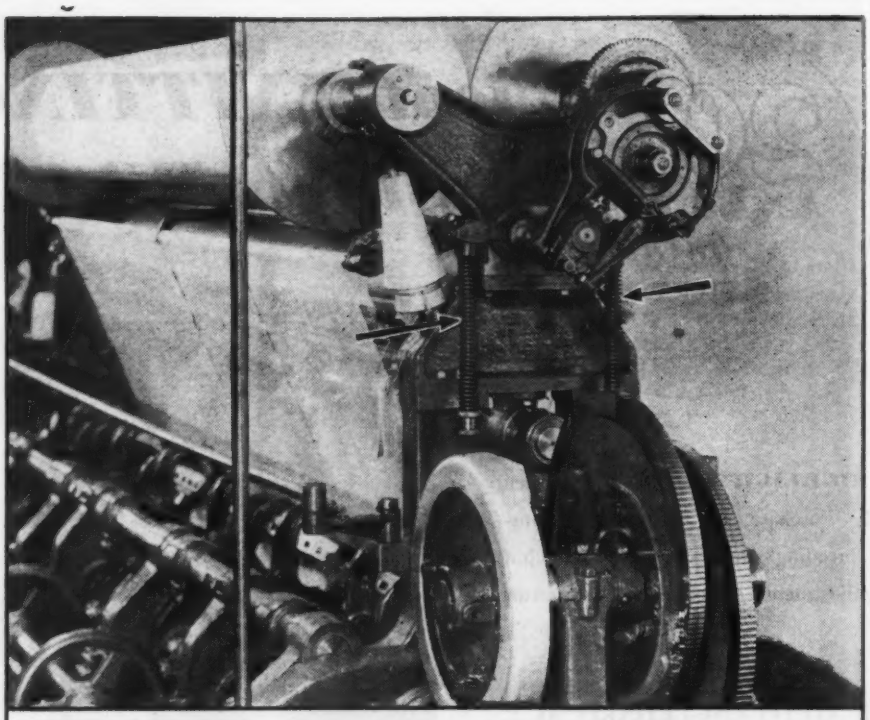


Fig. 2. Adjustment of warp-tension springs (indicated by arrows) is important in governing quality of cloth. Machine shown is a double-tricot type.
Courtesy Alfred Hofmann

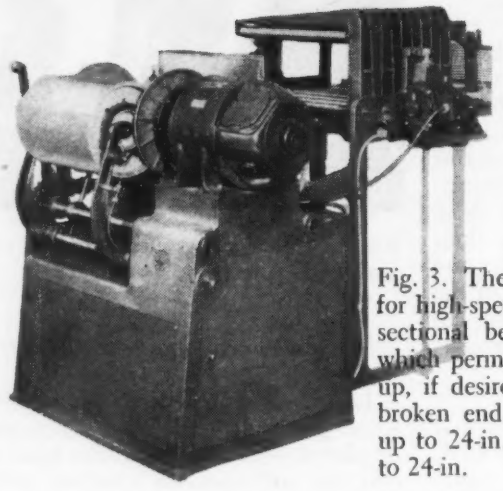


Fig. 3. The rear part of this machine for high-speed direct warping of tricot sectional beams is a slackner device which permits the beam to be backed up, if desired, to facilitate finding of broken end. It accommodates beams up to 24-in. in length, with heads up to 24-in. *Courtesy Robert Reiner*

After some time, the friction heats the machine, causing the guide bar to expand. It then has to be reset. It is therefore advisable to run tricot machines in air-conditioned shops to avoid a lot of resetting and to permit higher speeds to be run.

Probably the most serious problem in knitting on high-speed tricot machines is this effect of expansion and contraction on machine settings. At best, tolerances are only a few thousands. When guide bars come too close to the needles as they pass yarn around them, they clip out ends, especially at high speeds. If speed is reduced enough, damage or breaking will be less. Should the adjustment become so far off that guides hit the needles, the needles also are broken as well as the yarn. Even a good needle cannot survive many minutes if struck by a guide at the rate of 325 times a minute!

Everything possible should be done to eliminate machine stoppage, since "stop marks" can be serious cloth defects. Some tricot knitters feel that it is often preferable to let small defects pass without stopping the machine to determine the cause, than to run the risk of a stop mark.

To summarize, if a good-quality yarn is used, if it has the correct twist, if its warped right, and if machines are kept in good condition—then there is little trouble in getting high production at low cost.

20th ANNUAL Synthetics SURVEY

Tricot FINISHING For Volume Production

HIGHLIGHTS: Preparation Begins During Knitting — Finishing Starts With Dyed Fabric in Wet State — Labor-Saving Devices Incorporated.

KEEPING PACE WITH THE DEVELOPMENT of machines for knitting tricot fabrics, there has been developed a continuous process of finishing which is particularly adapted to quantity production.

Preparation for continuous-process finishing begins during knitting, although the finishing operation proper starts with dyed tubular cloth in a wet state. The tricot gray goods, which have been edge-marked while knitted, are doubled and sewn into flat tubular form by a special machine.

After dyeing, the pieces are sewn together end to end (still tubular) unless this has already been done for continuous dyeing. The endless, wet fabric in tubular form is spread flat and free of wrinkles by a unique internally driven spreading and propelling device. The wet, spread fabric is squeeze-roll extracted and, where desired, is impregnated with a finish and again squeeze-roll extracted, permitting a controlled amount of finish to remain in the fabric. The cloth is then dried on a conveyor-type drying machine in which heated air is impinged directly on the fabric while it is supported. While the cloth is being dried, longitudinal slackness is maintained at whatever degree desired. Following drying, the cloth passes immediately into a cooling chamber.

The final finishing operation is to subject the cloth to spreading by the same unique internally driven device referred to in the foregoing, to steaming, and to pressing by means of finishing rolls on which the pressure can be adjusted as desired. The steaming and roll pressing of the cloth imparts a character to the stitch and a hand to the fabric.

During the final finishing operation, the cloth is rolled or batched and again cooled while longitudinal tension or slackness is controlled and the sewn edge is trimmed. Two yardage-measuring clocks are used—while one is running, the other is read, thus minimizing delay. An additional feature on this machine at this point is a mandrel which falls in place automatically for the next piece as one piece of cloth is removed. There is also an automatic cutting device which separates the pieces at the seams.

CONTINUOUS. Finishing operations and steps (from soaking-wet fabric in rope form to finished, measured rolls of fabric) are normally accomplished in one continuous process on a combination of machines in range operation. Individual machines may be used for independent operation where plant conditions warrant.

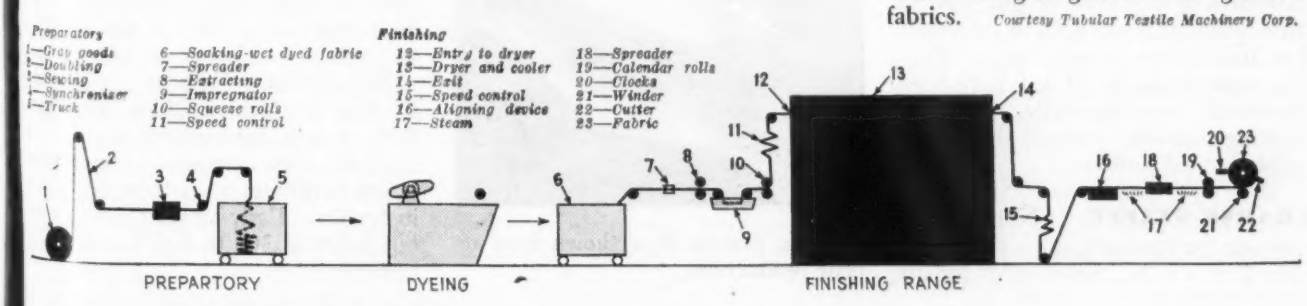
A cloth-preparatory machine sews the edge-marked fabric uniformly, and therefore finished fabric distortions and bowing are avoided. This machine has a special uncurling device incorporated which permits the high-speed sewing of single-bar as well as two-bar fabrics. Ordinarily the serrations of single-bar fabrics are difficult to uncurl and interfere with the sewing operation.

The continuous finishing method and the machines described utilize patents issued and pending which are controlled by Tubular Textile Machininery Corp. H. W. Butterworth & Sons Co. are the licensed manufacturers and agents for these machines. Due to the preoccupation of the latter company with war contracts, and WPB restrictions, further expansion of the use of these machines in the industry has been suspended for the duration.

The cloth in tubular form is normally dyed on a reel-type machine similar to those employed for circular-knit fabrics. For an article on the dyeing of knit-rayon fabrics see TEXTILE WORLD, June 1944, p. 121.

It is claimed that the tubular method of finishing tricot cloth has many advantages in the quality, appearance, serviceability, and wash shrinking when compared to finishing in the flat. Lateral patterns and stitch alignment are maintained straight. Supporting this is the fact that one of the largest manufacturers of tricot fabrics originally installed equipment for handling cloth in both tubular and flat form but abandoned flat finishing in favor of tubular.

An additional example of the great interest in the finishing of tricot fabric—due to its impending increase in the textile field—is shown by the development of the dryer by Proctor & Schwartz which is described in the New Equipment section of this issue. This dryer was developed particularly for the handling of tricot fabrics in tubular form, although its use on other fabrics is contemplated.



Schematic drawing shows preparatory and finishing range for handling tricot fabrics. *Courtesy Tubular Textile Machinery Corp.*

20th ANNUAL Synthetics SURVEY

New Synthetic YARNS Restrained by the War

HIGHLIGHTS: Three Protein Fibers Produced Experimentally—Rug Staples on the Market—Finer Yarns and More Filaments Expected—New Filament Yarn Being Developed for Hosiery.

THE WAR has had a peculiar effect on the development of new fibers and the improvement of existing fibers. On one hand, it has stimulated developments on fibers for use in the war effort, and hence much of it is closely guarded as military information. On the other hand, the development of some fibers has been retarded due to preoccupation of the scientists and physicists working on them, or due to inability to get material and equipment needed.

Examples of the former are the development of the extremely long-chain high-polymer fibers and the extremely specialized fibers, such as the alginate. Of this latter very little has been released, except that ordnance specifications accept such fibers in camouflage net—referring most likely to fibers which have been fireproofed by the inclusion of barium.

It is generally accepted that as soon as equipment, materials, and manpower are available the variety of synthetic fibers commercially available will be increased enormously. Yarn produced by existing processes undoubtedly will be finer than has ever been produced commercially heretofore. Other yarns will have many more filaments, or may even be produced in monofilament form, both in extremely fine and extremely coarse sizes. Knitting yarns as fine as 10 den. have been produced experimentally and are creating interest, particularly among full-fashioned knitters.

COARSE STAPLE. Not entirely new are the synthetic staple fibers produced in 5.5- to 25-den. sizes for use with carpet wools. Their development and promotion recently place them in the foreground of the newer fibers being produced on a commercial scale. Such fibers currently appear under such trade names as Tufton and Celanglo. Although based on current processes, these fibers can be considered as new since they contain special properties making them suitable for use in carpets.

Continued improvement in Vinyon has resulted in raising the melting point of this yarn, but not yet to such a degree that it can be considered satisfactory for most wearing apparel. However, considerable Vinyon is being used in commercial cloths, and lately Vinyon tow has found use as a packing in pumps and valves handling corrosive liquids.

PROTEIN FIBERS. Three relatively new protein fibers are creating interest; but none have, as yet, reached the commercial stage, although development work is continuing on them. This is true of Zein, which is manufactured by Corn Products Refining Co.; of soybean fiber, manufactured by The Drackett Co.; and of peanut-protein fiber, being developed by the Bureau of Agricultural & Industrial Chemistry.

Soybean protein fiber shown is of recent production.

The Drackett Co. does have a small plant in operation producing fiber for development purposes. Small amounts of yarn are being spun and fabricated experimentally.

The Bureau of Agriculture and Industrial Chemistry expects to have a pilot plant available within the next year to permit the production of protein fiber on a scale sufficiently large to permit its being tested under standard technical processing conditions.

Reynolds Metals Co. has announced two aluminum yarns under the trade names of Raymet and Rayspun. Raymet refers to untwisted and Rayspun to twisted yarn. Reynolds does not intend entering the textile field, it is claimed, but is perfecting machines for manufacturing the yarn from sheets of foil. Various alloys are being tried.

Press reports of the release of neoprene for use in yarn indicate that there will be considerable further development along this line and that commercial production should soon be possible. In the past, production has been very limited.

Velon is being produced in finer deniers than ever before, both monofilament and multifilament. So far commercial production has been limited to the larger monofilaments for use in upholstery fabrics, mesh, screening, and the like; but experimental work is being conducted on monofilaments as fine as 100 to 150 den., and multifilament yarn as fine as 30 to 50 den. In addition, Velon staple fiber is being produced in experimental quantities for use in pile fabrics, since it is felt that the excellent recovery properties of this fiber particularly suit it for rugs and other pile fabrics. Early in the year there was some premature publicity in regard to Velon hosiery yarns. This material is still in the development stage, but shows promise.

Polyethylene filaments, made by Carbide & Carbon Chemicals Corp. from a new light-weight plastic, are creating some interest. Experimentation continues to determine its use in textiles. Early samples show an extensibility of 300 to 600% and a slow recovery.

20th ANNUAL Synthetics SURVEY

Tire-Cord Investigation Proves RAYON SUPERIOR to Cotton

HIGHLIGHTS: Mass of Facts Presented to Truman Committee Has Just Been Released—Conflicting Claims Cleared Up on Heavy-Duty Tires—Factors Brought Out Believed Applicable Also to Smaller Sizes—10% of Domestic Cotton Market Involved.

By C. W. BENDIGO
Assistant Editor, TEXTILE WORLD

Fig. 1. Impact failures are less for rayon-cord tires than for cotton, Truman investigation shows, and this fact is largely responsible for superiority.

OVERWHELMING SUPERIORITY of high-tenacity rayon tire cord compared to cotton tire cord was established by the mass of evidence presented before the Truman Committee Sept. 22, 1943, a report of which has lately been printed and released. This special committee to investigate the National Defense Program was interested primarily in the larger sizes of tires, but some authorities have expressed the opinion that the data submitted are indicative of the superiority of rayon even in the smaller tires.

These conclusions are immensely important because they may affect 10% of the domestic cotton market, and the data definitely clear up a large amount of misunderstanding concerning high-tenacity tire cord. This misunderstanding was due to the fact that even as late as July 16, 1943, the superiority of the rayon cord was not established, mainly because virtually no testing was reported which eliminated all the other variables, such as the type or blend of rubber used, the tire construction, and the method of building the tire. Since that time, sufficient data have been compiled and sufficient military tests run to permit a thorough comparison.

If it had not been for the Senate's investigation of the recent rayon tire-cord expansion program, it is doubtful whether the degree of superiority of rayon tire cords would even now be established; certainly it would not be established as definitely as it has been as a result of the senatorial investigation. The seriousness of the situation can be recalled from the comments concerning the rayon tire-cord program by various southern senators—notably Senator Maybank, of South Carolina; Senator Bankhead, of Alabama; and Senator Connally, of Texas. They were sharply critical of the rayon tire-cord program even on the day the facts were presented to the Truman committee. Their attitude might be taken as a political gesture, unless they had had no inkling of the huge mass of facts which had been accumulated for presentation. Informed cotton men agree that it probably is best that the cotton growers and cotton-textile industry recognize at this time the serious competition which it is facing and make its future plans accordingly.

The investigation also brought to light a fact that had been kept quiet for political or public-relations reasons—viz., that virtually all inter-city bus companies had been using rayon-cord tires for the previous three to five years. It also brought to light that on mileage tire contracts for heavy-duty service rayon-cord tires had been used virtually exclusively. Investigation testimony showed that fatal bus accidents due to tire failure had been reduced almost to zero following the adoption of rayon-cord tires. It was pointed out that if it had not been for rayon tire cord, some bus lines would have had to reduce by 25 to 33⅓% the number of passengers they carried. Inter-city bus figures appear in Table I.

SYNTHETIC RUBBER. The tire-cord picture was once clouded by the introduction of synthetic rubber; but tests show that for 100% natural rubber, 100% synthetic rubber, or blends in between, rayon tire cord is superior in tire sizes of 7.50-by-20 and upward. Bus companies variously estimated that they would require from 25 to 30% more tires if it were not for the use of rayon cord. Another factor brought out by the various bus companies was that cotton carcasses can be recapped once or possibly twice, whereas the practice with rayon carcasses is to recap them as many as four times, the average being between two and three.

As late as the middle of last year, it was commonly assumed that the superiority of rayon tire cord—if any—over cotton tire cord was due to the fact that the rayon tire cord generated

TABLE I—INTER-CITY BUS FIGURES

BUS LINE	RAYON SUPERIORITY	COMMENT
A.	15%–53%	Average superiority 30%
B.	10%–30%	Cotton retread 1½ times; rayon up to 4
C.	25%–27%	Blowout hazard almost entirely eliminated
D.	10%	Cotton would require 25 to 33⅓% less load
E.	69%	Average rayon mileage 71,532 mi.
F.	−10% to +30%	Minus figure due to overloading

less heat. It has since been proved scientifically that, although rayon does generate less heat, the thickness of the rubber is principally responsible for the heat problem. Tests show that five degrees of heat can be expected for each 1/32 in. of rubber added. It has been established that synthetic-rubber tires generate more heat than natural-rubber tires; because, when a blow is struck on the synthetic rubber, it absorbs more of the energy, which is transformed into heat, and utilizes less of it in rebound. Naturally, then, the amount of heat involved is largely governed by the percentage of synthetic rubber to natural rubber.

However, more recent scientific tests have tended to discount the relative importance of heat in demonstrating the superiority of rayon tire cord over cotton. It has been established that impact failures are considerably less on rayon-cord tires than on cotton-cord tires and that this fact is generally responsible for the greater mileage of rayon. Figures supporting this statement are shown in Table II.

RAYON TIRES LIGHTER. It is well known that the Air Forces refuses to consider any tires except those containing high-tenacity rayon cord (or nylon). One of the factors concerning this decision is the fact that only 1 lb. of rayon tire cord is necessary to do the work of 1.3 lb. of cotton cord.

Of interest to the war effort, as well as to our economy after the war, was testimony brought out before the committee which shows that considerably less labor is required to produce a rayon-cord tire than to produce a comparable cotton-cord tire, as indicated at the end of Table III. Various senators have been perturbed by the probability that at the end of the war there will be a considerable rayon tire-cord capacity representing very little financial investment and that this fact may bring the prices of rayon-cord tires to cotton levels, whereas before the war cotton tires were 25 to 50% less expensive than rayon. These two factors might appreciably affect passenger-car tires and hence must be considered as an important part of the conclusions. Table IV shows the U. S. production of tires and the number of non-passenger tires. It demonstrates the importance of rayon cord at this time.

Of considerable interest to the war effort was the testimony that despite all of the rayon tire cord and cotton tire cord that can be produced, a serious shortage of cord is impending. It was this situation which led Donald Nelson as director of the War Production Board to push the expansion of rayon tire cord, even before it had been clearly demonstrated, except for a trend, that rayon-cord tires were superior. The program was momentarily held back because it was once thought that low-gage cotton cord would prove

Fig. 2. Synthetic tire, using rayon cord, on Public Service Co. of New Jersey bus is here being checked by D. E. Garrison, U. S. Rubber Co. tire expert. *Courtesy U. S. Rubber Co.*

TABLE II—COMMERCIAL TRUCK FLEET RESULTS

	TIRE SIZE	ORIGINAL NUMBER OF TIRES	NO. OF IMPACT FAILURES	AVG. MILEAGE AT FAILURE	% IMPACT FAILURES
COTTON	8.25–20	150	22	25,354	14.7
	9.00–20	200	25	36,768	12.5
	10.00–20	127	13	45,874	10.2
	ALL	477	60	34,533 Avg.	12.6
			RATING	100%	100
RAYON	8.25–20	118	7	32,946	5.9
	9.00–20	281	21	50,943	7.5
	10.00–20	33	1	69,781	3.0
	ALL	432	29	43,300 Avg.	6.7
			RATING	137%	53

superior to rayon; but even the companies which supported the low-gage cord have since acknowledged the superiority of high-tenacity rayon.

The whole issue has been somewhat clouded by some Army tests made in October and November, 1942, on 7.50-by-20 tires. Some tests indicated a superiority of the various cords in this order: cotton, rayon, low-gage cotton. These have since been proved inaccurate because of other variables. Many of the earlier tests were not scientific and were conducted on such small lots of tires that gross errors could easily creep in.

The data presented to the committee were amassed by H. LeRoy Whitney, technical consultant to Donald Nelson, and James A. Jacobson, special assistant to Mr. Nelson. In addition to proving superiority of rayon tires, this information disclosed that at best our tire-cord program was doomed to fall short of the goals set and that, if it had not been for the use of high-tenacity rayon, an extremely serious shortage would have developed for both military and essential civilian needs.

STATEMENT BY MANUFACTURERS. In a letter to Mr. Whitney dated Aug. 19, 1943, is the following statement: "The eight undersigned companies consume at least 90% of the rayon used in tires and they agree unanimously that the future truck tire cord will be rayon or some undeveloped material which is superior to rayon for use in tires." This letter was signed by: Dunlop Tire & Rubber Co., The Firestone Tire & Rubber Co., The General Tire & Rubber Co., The B. F. Goodrich Co., The Goodyear Tire & Rubber Co., Lee Rubber & Tire Corp., Seiberling Rubber Co., United States Rubber Co.

As a result of this mass of evidence, the Government has placed fresh emphasis on the rayon cord program, with stress on pushing production.

TABLE III—BUS MILEAGE CONTRACT SUMMARY

(Basis 1,000,000 bus miles)

Average additional tires needed if cotton cord	30%
Rubber increase using cotton in place of rayon	2240 lb.
Increase in rubber if using cotton	38%
Increase in weight of cotton fabric over rayon	66%
*Increase in man-hours manufacturing cotton tires over rayon	30%

*This covers rubber-mill hours only and does not take into consideration any difference in man-hours required between cotton and rayon in manufacturing fabric.

TABLE IV—TIRE PRODUCTION RECORD

YEAR	TOTAL U. S.	NON-PASSENGER CAR TIRES
1936–40 average	53,000,000	7,000,000
1941	61,000,000	11,700,000
1942	15,400,000	12,400,000
1943 (partly est.)	23,600,000	14,400,000
1944 (program)	50,000,000	20,000,000

TABLE V—APPARENT vs. ACTUAL WALL STRENGTH

Chart shows importance of cord uniformity.

	AVERAGE 25 Cords Broken Singly	AVERAGE 25 Cords Broken Together	Constr.	STRENGTH Apparent	STRENGTH Actual
RAYON	19 lb.	14.5 lb.	26 ends/in.	494	379
COTTON	13 lb.	12.7 lb.	33 ends/in.	429	419

TABLE VI—INTER-CITY TRUCK LINE FIGURES

TRUCK LINES	RAYON SUPERIORITY	COMMENT
9 companies	10%–33%	Increase despite overloads. Twice as many rayon recaps.

TABLE VII—ARMY GROUND FORCES SUMMARY

TIRE	SERVICE	RAYON SUPERIORITY	COMMENT
8.25 10-ply & up	Rough terrain	93%	Bruising and cutting principal problems
	Long-distance supply	330%	Heat and sustained operation
7.50–20 and 9.00–16	*Cross country	38%	Compared to 8-ply cotton plus 2 cap plies
	Long distance	24%	Compared to 8-ply cotton plus 2 cap plies

* To make almost comparable cotton-cord tires would require 10-ply construction which would use 69,300,000 lb. of cotton cord, compared to 48,300,000 lb. of rayon, and would require 1,400 long tons more crude rubber and 7,400 long tons more GR-S synthetic rubber—in addition to an estimated 10% more machines and labor.

20th ANNUAL Synthetics SURVEY

Tire-Cord Layout Promises New High in EFFICIENCY

HIGHLIGHTS: Novel Features Built into Clemson Plant—Employee Comfort and Efficiency Given Much Consideration—Modern Filter Plant Furnishes Pure Water for Operations and Community—Homes for Employees Can Serve as Models.

This mill is the largest independent unit devoted solely to twisting and weaving rayon tire cord. Annual capacity is 12,000,000 lb.

By T. O. OTT, Jr.
Southern Editor, TEXTILE WORLD

WHAT WILL the new textile plant look like after the war? What will be its design? What construction principles, materials, and equipment found desirable in the light of more recent and enlightened experience will be used? These and many other questions have been answered before the end of the war by the new rayon tire-cord plant of Excelsior Mills, built and operated by Deering, Milliken & Co., Inc., on the Southern Railroad near Clemson.

This modern, air-conditioned, fluorescent-lighted, windowless plant, with 117,000 sq.ft. of floor space is built of concrete and steel with the inside walls faced with salt-glazed structural tile, and the outside walls faced with spot-manganese structural tile. Top flooring is of rock maple. The main offices and entrance face the railroad and reservoir, and the area surrounding the plant will be landscaped.

The mill has a filter plant to furnish pure water to the mill systems and to the community homes. Besides many unusual details of construction, numerous facilities for the comfort and welfare of the employees are either already installed or planned. These include an intercommunication system that can be used for broadcasting music. There is a modern cafeteria with built-in projection booth where employees can have instruction. Also included are tiled toilets, showers, washrooms, first-aid room, and drinking fountains. In addition, there is a comfortable locker room for women employees and a booth where uniforms and towels will be issued.

MODERN HOMES. The 50 modern homes, built in the shape of a semicircle around the property, are a credit to any community and will be used by key employees. Modern conveniences such as oil heat, electric water heaters, and electric refrigerators are furnished. The houses are brick veneer with plaster walls and ceilings and hardwood floors.

At the north side of the building are the filter plant, the water-cooling system for the air-conditioning units, the machine shop, and the power control panels. All pipes for water supply and return, and electrical cables are placed in a large walk-tunnel running the full length of the building along the east wall under the main floor level. This makes it easy to inspect and maintain all cables and pipe lines. In addition, there is an Exide emergency-power system that furnishes enough light to the plant in case a power failure, so that employees can move about safely.

The main floor of the plant is one large room where textile machinery is placed for straight-line production running the length of the building. At the beginning of the operations, and to the rear corner of the building, is a receiving platform from which materials can be delivered directly to the first process. At the other end of the plant, up to the rear corner of the building, is an enclosed shipping platform. In between and at the rear of the building are housed the two Carrier air-cleaning and air-conditioning units. At the front and center of the building are the main entrance and offices, the cafeteria, the rest room, the first-aid room, and the testing laboratory.

The floor of the building is built up of layers as follows: 3 in. of tar rock, 1½ in. of tarred sand, 3 in. of creosoted subflooring, 1 in. of salt-treated intermediate flooring, water-proof paper, and finally rock-maple flooring.

The roof is a 4½-in. slab of lightweight reinforced concrete, laid on steel beams supported by widely spaced (30 by 40 ft.) steel columns. On top of this slab are two cap sheets and primer, 2 in. of cork, four plies of felt, slag and pitch—a 20-yr. bonded roof with all metal flashing and tile raglets.

Ducts for air supply in the plant from the air-conditioning equipment

are placed on the roof and supply controlled air to 42 outlets recessed in the ceiling of the main room. Exhaust air is forced from the building through the louvers in the walls of the building.

This is the first time Carrier has ever made an installation putting the ducts on the roof, but this has been done in this instance because it allows better circulation of the air and prevents the accumulation of lint and dust.

The air-conditioning system will allow close control of the product and give employee comfort. It is designed for 57 to 60% r.h. at 80° F. dry-bulb temperature for the year round. The air for the offices and cafeteria is drawn from the main room and is reconditioned. The testing laboratory will have its own air-conditioning equipment for maintaining standard conditions.

Lighting is of the fluorescent type and the fixtures are placed close to the ceiling in three continuous rows for each bay, across the width of the building. The system is designed to give 50 foot-candles at the working surface. Each row of lights is controlled by three switches to allow one-third or two-thirds of the lights to be cut off.

MACHINERY. The rayon tire-cord process machinery now being installed is listed as follows: 64 Whitin, Model BB, 176-spindle, beam-creel twisters for adding twist to the 1100-den. filament rayon shipped to the plant on beams; 6 Saco-Lowell respoolers of 120 spindles each, for preparing the yarn for cabling; and 48 Saco-Lowell, Model BC, cable twisters of 132 spindles each. The Whitin frames are 3½-in. ring, 4-in. gage, 8-in. traverse; the Saco-Lowell frames are 5½-in. ring, 7-in. gage, 8-in. traverse. Both twisters have horizontal rings.

Weaving will be done on 64-in. Draper, Model XP, tire-cord looms using a spool creel. There will be 22 of these looms. Cotton filling will be purchased on quills, and the inspection and fixing of the fabrics will be done on the loom.

Beams are loaded on twisters by means of motor-operated hoists and riggings on an overhead Cleveland Tramrail system. Spools for cable twisters and looms will be handled in rolling boxes.

PERSONNEL AND TRAINING. When in full operation, this plant is expected to employ 250 persons, only about a third of whom will live in the plant community. Others will be drawn from outlying communities and farms. Operations will be for three 8-hr. shifts, seven days a week.

Training has been organized in the Textile Building at Clemson College, where space has been provided for one of each type of machine used at the plant.

New employees who are destined for the machine-operative jobs are given pre-employment training. These new employees are carefully selected through interview and intelligence tests and trained by Job Instructor Training methods. In addition, employees are shown films on basic economics and some are given flow charts to study to allow them to gain a better understanding of their jobs.

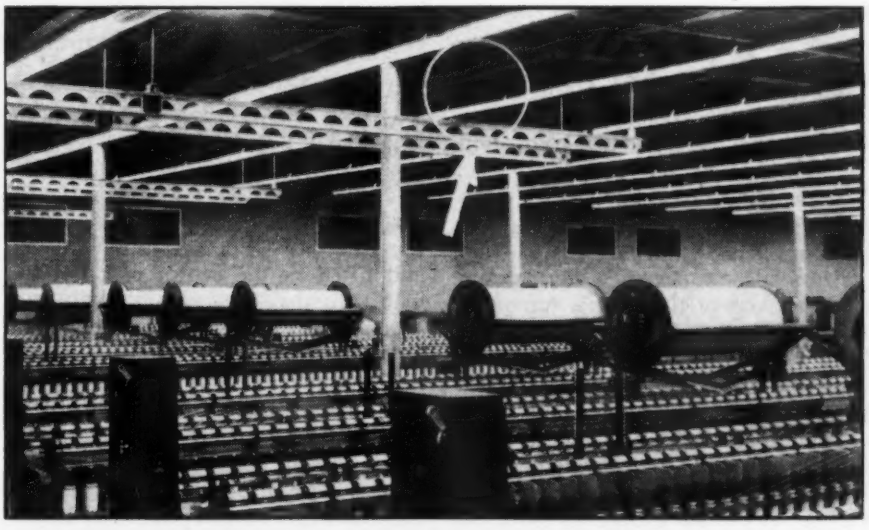
Because of the working conditions in the plant and the homes available to key employees, 450 applications were received in the first four weeks.

Everything possible has been done to assure the lowest possible cost operation; and the mill will be operated seven days a week, three shifts, the shifts rotating each week, thus assuring that each shift will come under the supervision of the overseer once every three weeks, guaranteeing equal quality and quantity of production on all three.

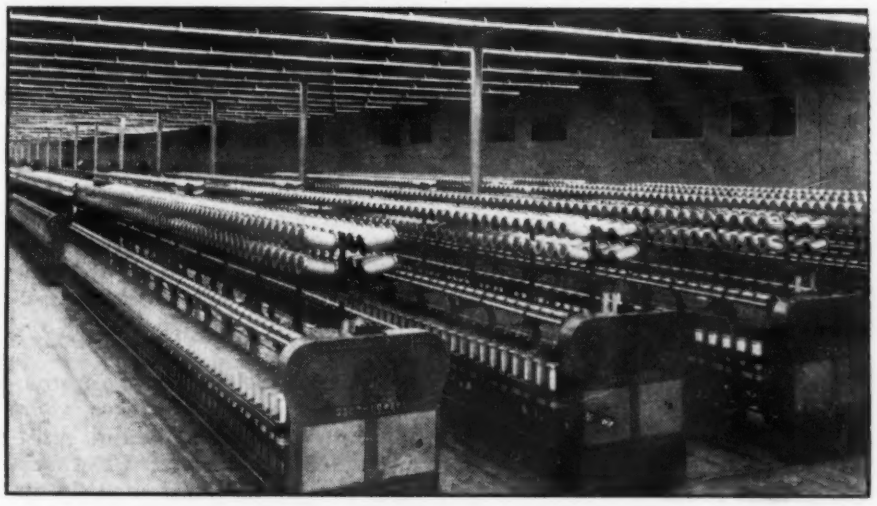
A number of operatives are working in the plant at present both to gain experience and to break in the machinery. All machines will be in operation by the middle of September, and the plant will be producing at maximum capacity in the fourth quarter.

Something of the magnitude of the undertaking can be realized when it is known that the plant was practically complete in 117 days after ground work broken in February, 1944.

At the present time—even while the finishing touches are being put on the plant, production should be coming from it in appreciable quantities. J. E. Sirrine & Co., Greenville, S. C., were engineers for the project; and Daniel Construction Co., the main contractor. Excelsior Mills handled the purchase of its own machinery.



Arrow points to air-conditioning inlet in beam-twisting section.

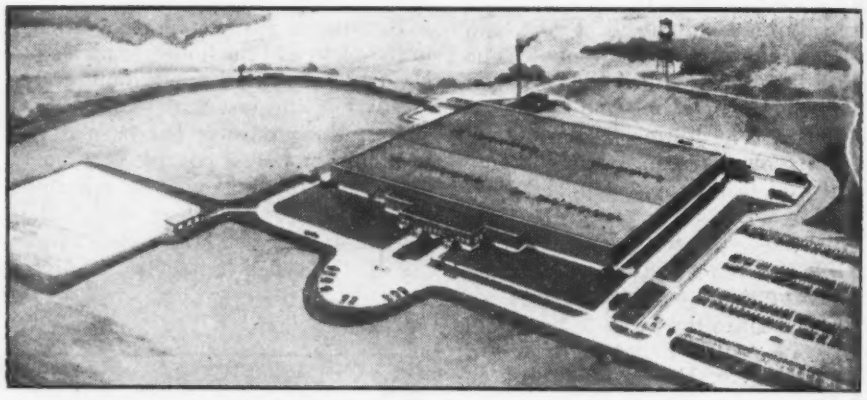


From these cable twisters the tire cord goes directly to loom creels.

20th ANNUAL Synthetics SURVEY

Tire-Cord Plant Foreshadows Postwar MILL DESIGN

HIGHLIGHTS: Building Is Windowless Except for Office—Mezzanine Increases Useful Space—Walls and Roof Are Insulated—Lighting Can Easily Be Increased.



New Scottsville tire-cord plant as it appears from architect's drawing.

By EARLE MAULDIN
Southern Editor, TEXTILE WORLD

THE NEW RAYON tire-cord mill nearing completion at Scottsville, Va., contains many features of interest in connection with modern postwar mill design. Actual construction started with the laying of the cornerstone in May of this year, a ceremony in which the governor of the state, the local mayor, various government officials, and officers of the United States Rubber Co. participated. The plant is being erected by the Defense Plant Corp. and will be operated under lease by the U. S. Rubber Co. with O. L. Ward in charge as superintendent.

A five-months schedule of construction was set up by Daniel Construction Co., the general contractor; and, with the close cooperation of the engineering firm of J. E. Sirrine & Co. as well as the engineering staffs of DPC and the U. S. Rubber Co., the work has proceeded on scheduled time, and with few delays. Next month the plant is expected to be nearing full production.

LOCATION. The plant is located on a 67-acre tract at the horse-shoe bend of the James River, on the C & O Railroad adjoining the city limits of Scottsville, which is a typical Virginia small town, situated about 20 miles south of Charlottesville in a gently-rolling, well-drained, wooded, and pleasant country.

The foundations for the brick, steel, and reinforced-concrete structure rest in a firm clay. The walls of the huge windowless buildings are of brick, insulated with a 2-in. layer of Foamglas, furnished by the Pittsburgh Corning Corp., carefully butted and fitted in the center of the wall. The columns, trusses, and beams are of steel with a precast reinforced slab roof over the main portion. The roof has a slight pitch of ¼ in. per foot to provide proper drainage. Steel sash is used in the office addition. This section contains the offices, other administrative departments, the testing laboratory, dispensary, and First Aid room; and is designed as an ornamental-front structural feature to break the monotony of the long line of solid, straight brick wall.

Inside, column spacing gives broad areas free from interference, the column spacing being on 52-ft. centers across and 20-ft. centers the length of the building. The main building contains approximately 128,000 sq. ft. of floor space, including platforms for loading and receiving. About 4,000 sq. ft. of this is mezzanine floor construction over the machine shop, supply room, and cafeteria.

SPECIAL FLOOR. Floor construction is designed for resilience, vibration absorption, and moisture resistance. A 3-in. tar-concrete base supports a layer of tarred sand 1½ in. thick, in which is embedded 3-in. creosoted square-edge timber securely toe-nailed, ¾-in. salt-treated pine intermediate flooring, a layer of waterproof paper, and $\frac{53}{32}$-in. square-edge hard-maple flooring, face nailed. The roof slabs of reinforced concrete are covered with a layer of 2-in. cork insulation over which is applied a 20-year bonded gravel-surface Johns-Manville roof.

On the roof are located the exhaust vents for the air-conditioning system furnished and installed by the Carrier Corp. The conditioners are placed just under the roof slab in two rows, down the length of the room between the roof trusses. Catwalks extend the entire length of the room, giving ready access for inspection and maintenance.

Over the twister section there are 28 individual central stations each consisting of a standard fan, a nonfreeze re-heater section, a humidifying section, and a mixing chamber together with outside return air dampers. Each unit has a capacity of 16,000 cu. ft. per min. One 5-hp. motor drives the fan and one ½-hp. motor is connected to the spray-water circulating pump. Over the weaving section of the room there are two similar stations of 10,000 cu. ft. per min. capacity.

Room conditions are maintained by means of a recording humidity controller for each station. This operates the spray-water throttling valve and reheater. Dew point in the humidifying section is maintained

through a thermostat operating outside, and return air dampers. In connection with each exhaust ventilator, there is an automatic damper which operates in conjunction with the outside and return air dampers to relieve air from the manufacturing areas as required. Atmospheric conditions in the room are as follows:

Summer conditions–65%. 90° F. dry bulb (max.);

Winter conditions–65%. 75° F. dry bulb.

In the testing laboratory, a constant atmospheric condition of 53% r.h. and 70° F. dry bulb is maintained by means of a standard conditioning unit for textile laboratories, complete with Freon direct expansion refrigerating system equipped with recording controls and electric reheat device. Circulating system of ducts and automatic controls provide heat and ventilation for office and other areas not included in the manufacturing areas and laboratory.

LIGHT PROVISIONS. Fluorescent lighting is installed throughout the plant, type HF-100 Sylvania Electric Products, Inc., equipment being used. The unique feature of the lighting installation is the provision made to permit future increase in lighting levels at a minimum of expense.

While the installation at present delivers 30 foot candles at the working plane, higher levels–exceeding 50 foot candles from the same system–are possible by completing the blank fixtures incorporated in the continuous-row design. Offices, cafeteria, machine shop, and other areas are using the same type fixture in individual units.

On the side opposite the office extension, and in the building proper, is located the supply rooms, machine shop, toilets, wash rooms, rest rooms, kitchen, and cafeteria. To provide additional floor space, a mezzanine floor is installed over a large part of this area. A seating capacity of 100 is provided in the cafeteria, which has resilient tile floors and an acoustically treated ceiling. Locker rooms, rest rooms, and showers have tiled walls. A Bradley wash-fountain is installed for the men, whereas the women are provided individual lavatories.

The machine shop contains all necessary equipment for proper maintenance of the plant. It has concrete floors, is well arranged, and is manned by skilled mechanics.

Adequate and satisfactory water for the operation is provided by connections with the Scottsville city water supply. Sewer connections are also made with the municipal system. Fire-protection requirements are met by having a reservoir of 1½ million gal. for storage, one 80,000-gal. elevated tank, and one 1000-g.p.m. Fire Underwriter's pump, direct-connected to a gasoline engine. Provision is made, and foundation installed, for an additional motor-driven pump.

Separate buildings house the pumps and boilers. There are two 60-hp. boilers for heating only, stoker fired. Electric power for the operation of the plant is purchased from the Appalachian Power Co. through three 1000 kva. transformers installed in an outdoor bank. There is one circular brick stack 4 ft. inside diam., 115 ft. high, which was erected by the Consolidated Chimney Construction Co.

STRAIGHT-LINE PRODUCTION. Machinery throughout the plant is planned for straight-line production. Rayon filament yarn of 1100 denier is purchased on beams. At one end of the room it is given its first twist. It is then respooled, cabled, woven, and comes out at the other end as tire-cord fabric. The machines used are shown in the accompanying table. Cotton yarn used for filling is rewound on bobbins at the plant.

When in full operation, the plant will produce 12,000,000 lb. of rayon tire-cord fabric a year, which is about 5% of the authorized annual production at this time. There will be 300 employees, about 70% women, working three shifts, six days a week.

To facilitate handling material in the building, an overhead tramrail system has been worked out. Electrically operated carriers with push-button controls will take beams from storage area to machines and rolls of cloth from machines to storage. Electric-hoist trucks will take the rolls of cloth from the storage areas and place them in the cars, which are loaded from a platform along the side of the building, and will unload beams of yarn from the cars.

An inter-plant communication system will connect all departments and will serve to speed up operations. It will be connected into the telephone system through a PBX which gives outside and inside connections at all times. Enclosing the entire tract is a Cyclone chain-link fence 2,500 ft. long.

O. L. Ward, plant manager, addresses group at cornerstone laying ceremonies.

TEXTILE MACHINERY IN PLACE, ***Scottsville Plant, U. S. Rubber Co.***

Ply Twisters	62	176-sp. Whitin model BB	3½-in. ring	5-in. ga.	8-in. traverse	15-hp. motor
	25	160-sp. Saco-Lowell model BC	3½-in. ring	5-in. ga.	8-in. traverse	15-hp. motor
Re-Spoolers	9	100-sp. Saco-Lowell		7-in. ga.	9-in. traverse	5-hp. motor
	1	100-sp. Saco-Lowell		7-in. ga.	8-in. traverse	5-hp. motor
Cable Twisters	65	132-sp. Saco-Lowell model BC-2	5½-in. ring	7-in. ga.	8-in. traverse	20-hp. motor
Automatic Filling Winder	1	15-sp. Whitin-Schweiter			8¾-in. traverse	2 hp. motor
Looms	20	64-in. Draper model XP tire cord looms				2-hp. motor

20th ANNUAL Synthetics SURVEY

Rayon Staple Fiber Steadily Increasing on TOW-TO-TOP System

HIGHLIGHTS: Two Processes Used In Making Staple – Tow-to-Top in Commercial Production on Worsted and Spun-Silk Spinning–Much Cut Staple Used on Cotton System–Production Limited by Rayon Restrictions.

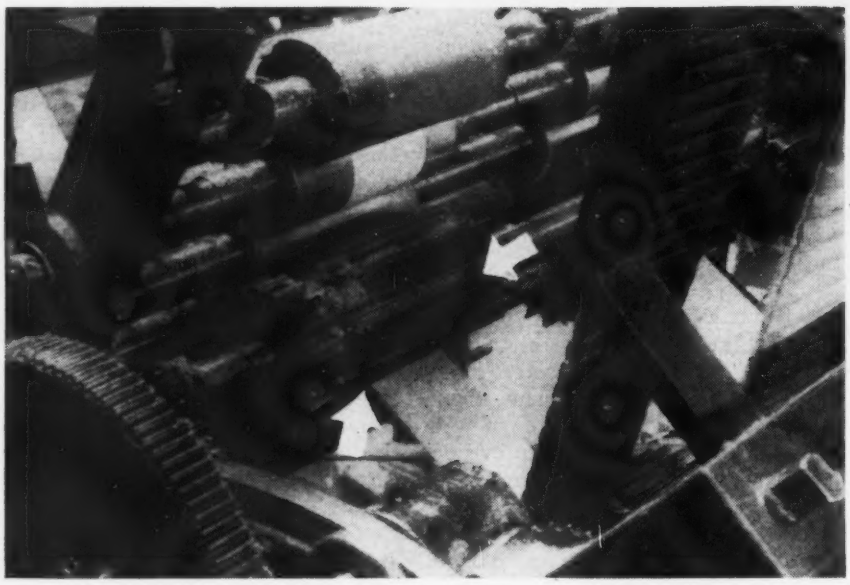


Fig. 4. Serrated cylinders that control stapling in Perlok tow-to-top system are shown by arrows. One is above and one is below the rayon being stapled.

PREDICTIONS ARE that the greatest increase percentagewise in the use of synthetics in the near future will be in staple fiber. Yarns used will be principally viscose process with a smaller amount of acetate process and still smaller amounts of nylon. Two methods will be, and are being, employed for producing staple fiber from rayon. To date, the largest poundage of staple is run on the cotton system, as described in a series of articles by Fletcher S. Culpepper in TEXTILE WORLD March, April, May, and June issues. Second in quantity are spun yarns made from continuous-filament strands which are broken up without permitting the fibers to lose their parallel alignment and continuity of position, one with the other. It is estimated that this year the poundage processed by the latter method will be 1,500,000, as compared to only 200,000 two short years ago. There is but little question that this poundage would be even greater if it were not for the limited quantity of tow available due to wartime restrictions.

At least three systems are being employed to produce spun yarn without disturbing the parallel arrangement of the filament. They are the Perlok, the Campbell, and the Greenfield. The first two are American systems, and the third is British. Of the three, the Perlok is the system used to the largest extent in this country, and therefore it will be the process described here, although brief mention will be made of the other two.

TOW-TO-TOP. The general term used for describing the process of manufacturing spun rayon sliver without resorting to carding and combing is generally referred to as "tow-to-top." This term is not strictly accurate but is the only one that is commonly applied to all of the various methods.

The use of the "tow-to-top" system of obtaining rayon staple to be blended with wool has been accepted for a number of years. More recent is the interest of silk spinners in this method, especially for obtaining stock to be spun into knitting yarns. So far, there has been little or no commercial operation either in this country or in Britain in applying the "tow-to-top" system of producing staple sliver for spinning on the cotton system. This, briefly, is because cotton mill operations are on such a low-cost basis that the charge for top approximately equals the cost of producing sliver—based on current charges for tow.

There are several ways by which continuous-filament rayon can be reduced to rayon staple fiber. One is by means of abraiding, another by cutting, and a third by breaking by means of a pull. The first is satisfactory for yarns of low denier and has been exploited somewhat, but is not economically as feasible as breaking large masses of continuous-filament yarn. The British generally cut the continuous-filament yarn to produce staple, whereas the principal system in this country utilizes breaking over metal cylinders equipped with sharp edges. This last is somewhat different from breaking the filaments by means of a direct pull. Fig. 1 shows rayon yarn that has been broken by means of a direct pull, while Fig. 2 shows the same kind of rayon run on the same machine but broken over serrated cylinders. Both of these samples were broken on a Perlok machine such as is shown in Fig. 3. A close-up in Fig. 4 shows the breaker cylinders which control the breaking of the filament. There are two sets of cylinders, one on

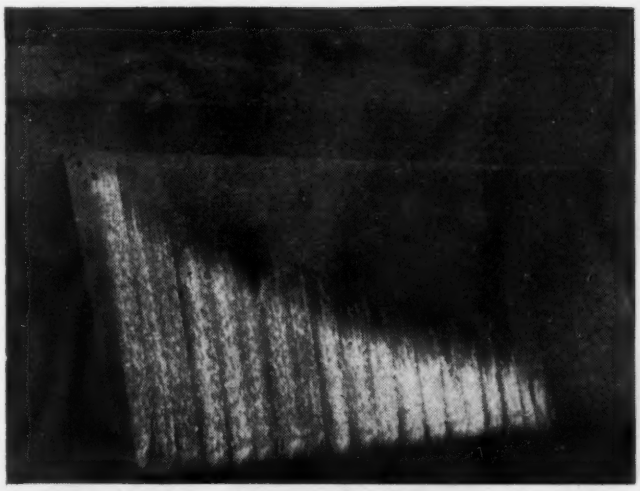


Fig. 1. Array of staple produced by direct pull between two sets of rolls.

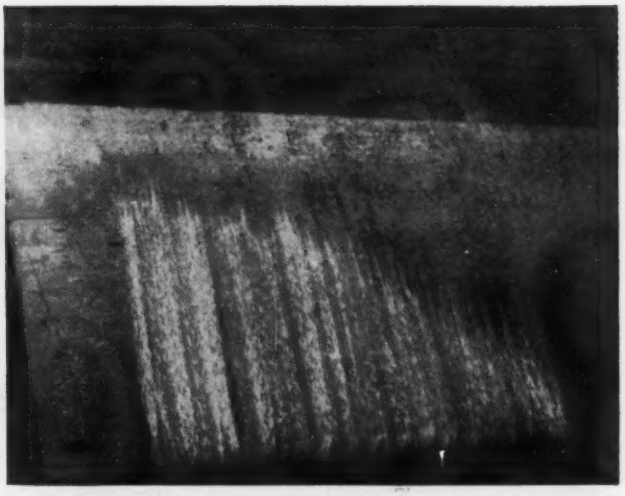


Fig. 2. Array produced by inserting breaker cylinders on same machine as used for Fig. 1.

top and one underneath as shown by arrows in Fig. 4.

PERLOK SYSTEM. The Perlock system begins with continuous-filament tow at present totaling 175,000 den. as supplied by a rayon company. In Fig. 3 this yarn can be seen coming from a carton at the back of the machine. The rayon tow is opened up by means of a wheel which can also be seen in Fig. 3, and from there it is engaged in a set of three snubbing rolls before proceeding to another set of three intermediate or retaining rolls. These retaining rolls can be seen in Fig. 4 just back of the breaker cylinders. The front or delivery rolls can also be seen in Fig. 4. These rolls are very similar to those used on a worsted gill box. To complete a description of the process, the yarn goes from the front rolls to a trumpet which can be seen in Fig. 5 and then through calender rolls to a crimping device which is clearly visible just above the roving can also in Fig. 5. The crimping device imparts a light, semi-permanent crimp to the sliver which holds the fiber together. This crimp is visible on the staple diagrams shown in Figs. 1 and 2.

The Perlok system proper ends with the yarn leaving the front roll; but customary practice is to gill it for blending with wool. If the tow is to be used in 100% spun rayon, the gilling is by-passed.

GREENFIELD SYSTEM. The Greenfield British process of producing tops substitutes cutter bars instead of the breaker bars in the Perlok system. The cutter bars normally handle a rope totalling 300,000 den. These bars cut at an angle of 5 to 15° depending on the staple desired. After cutting, on the Greenfield system, the staple is deposited on an apron and is fed into an intersecting gill box of the standard worsted type. At this point top results, although two more gillings are normally recommended.

The Campbell process is similar to the Greenfield process in that it cuts staple and then feeds it directly into a gill box. A false twist is inserted.

There has been increasing recognition of the importance of finish and general characteristics of the tow on the resulting staple or top. It is interesting to note that developments in this respect and on machines since 1936 have resulted in increasing the total denier of the yarn that could be handled on the Perlok system from 10,000 den. to 175,000 den. One of the most important steps in the development of producing tops by means of drafting has been the insertion of the several breaker cylinders, which was done on the Perlok system in 1942.

A comparison of the "tow-to-top" method of producing top and conventional methods of producing top on the worsted system is difficult to make since there are so many variations of the conventional. In brief, however, the "tow-to-top" system consists of a stapling operation, which is done on one machine, and one gilling process. The conventional—utilizing cut staple supplied in bale form—consists of opening, carding, one or two gillings. balling, combing, and one or two additional gillings to produce a top. The "tow-to-top" method has been handicapped, however, by the differential between the cost of tow in continuous-filament form and the cost of cut staple in bale form. There seems to be some indication that this differential may change. It is interesting to note that at least one rayon producer has secured Perlok license to produce acetate-rayon tops.

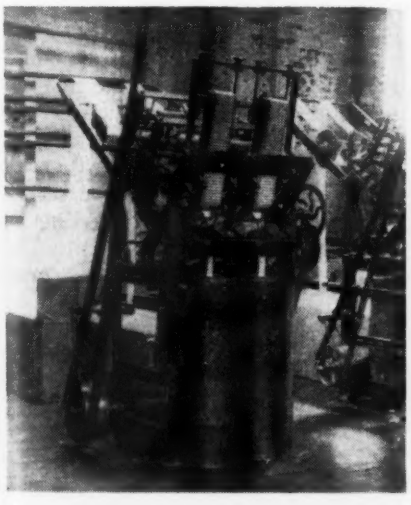


Fig. 3. Part of installation of Perlok machines at Garth Mfg. Co., which produce rayon staple.

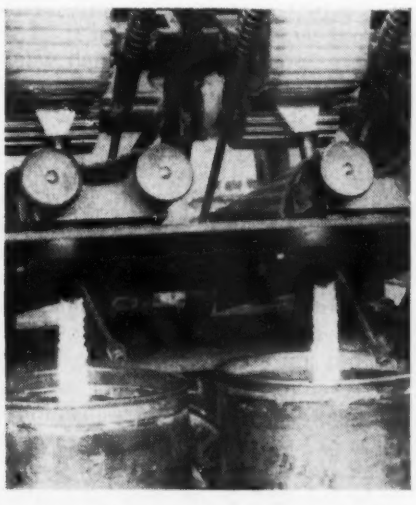
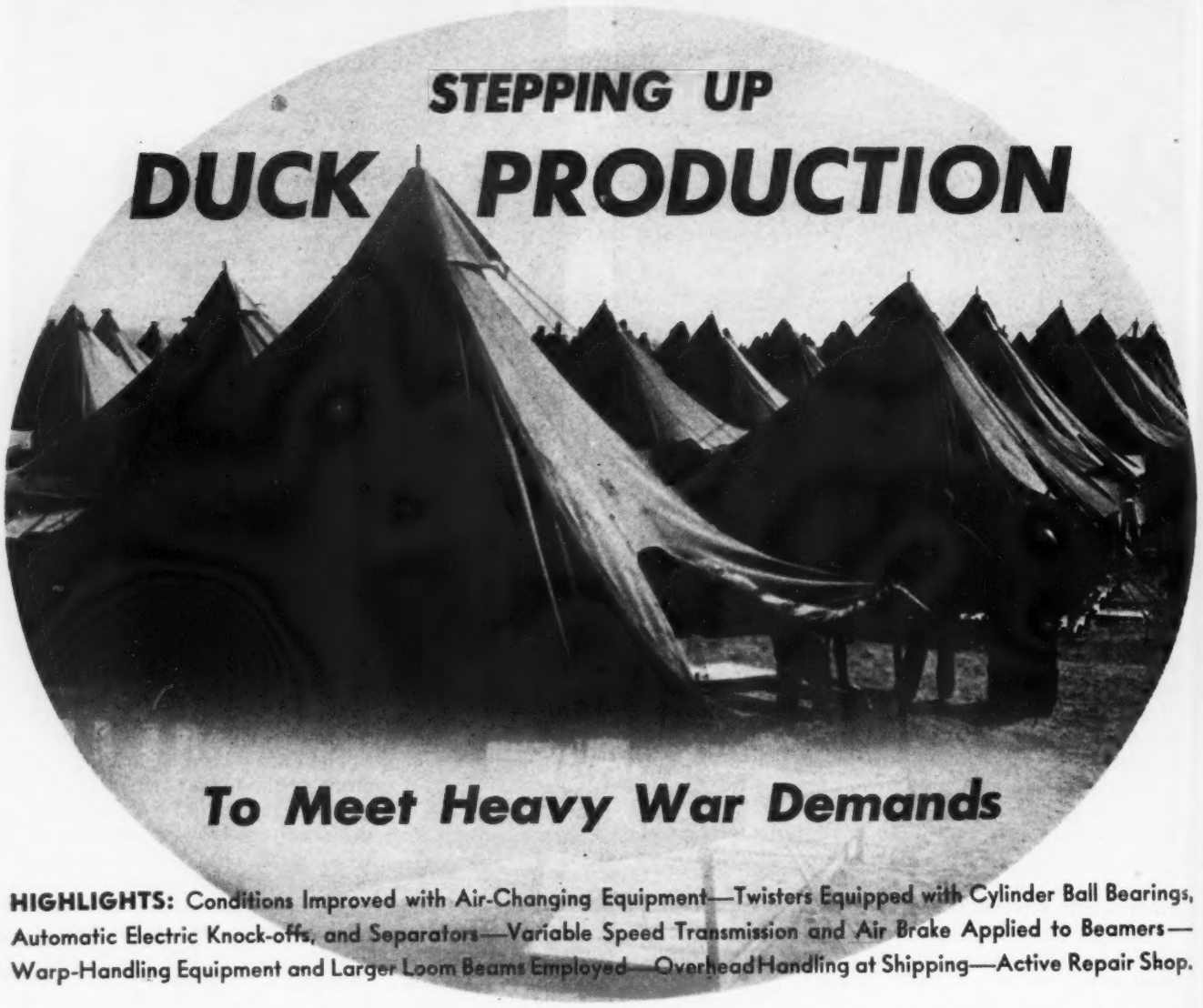


Fig. 5. This view of Perlok machine shows delivery and device which imparts semi-permanent crimp.

STEPPING UP DUCK PRODUCTION To Meet Heavy War Demands



HIGHLIGHTS: Conditions Improved with Air-Changing Equipment—Twisters Equipped with Cylinder Ball Bearings, Automatic Electric Knock-offs, and Separators—Variable Speed Transmission and Air Brake Applied to Beamers—Warp-Handling Equipment and Larger Loom Beams Employed—Overhead Handling at Shipping—Active Repair Shop.

By HORACE L. PRATT

IN NORMAL TIMES there is quite a demand for the various types of cotton cloth classified as duck—that is, hose and belting duck, numbered duck, sail duck, laundry duck, and chafer duck. This demand is ordinarily met by a comparatively few mills, as the production per loom on this class of goods is large.

With the declaration of war came a greatly increased demand for duck by the various armed services as well as by the lend-lease program. It was a demand which overtaxed the capacity of the mills normally on duck, and the government called upon certain other mills to convert their looms to duck. In the meantime the regular duck mills set about finding ways and means of increasing their own production to meet the new demands. This article is the partial story of how one of these mills has undertaken this task.

MEETING OF FOREMEN. One of the first things which the management did was to call a meeting of the foremen to discuss the situation. It was made plain to the key men of the plant that a considerable increase in production was necessary, and this in a plant which already prided itself on its large production and which would soon be faced with a shortage in manpower, a scarcity of supplies, and more strict governmental regulations.

Of course, it was believed that a longer work week would have to be adopted. Yet, it was considered doubtful that this would materially help in the long run, as the employees would soon tire of the longer hours and would stay away from the job if it did not suit them to work. (For a time a seven-day-a-week schedule was adopted, but this was later abandoned for a six-day work week with only a small decrease in production.)

At the start of the new program, a meeting of the employees' representatives was also held and the situation explained to them. They promised wholehearted support. Naturally they expected to share in any increased earnings of the mill brought about by the large war contracts. As a result, all wage increases allowed under the wage-ceiling program of the government have been granted the workers in this plant.

The management made it plain to everyone concerned that the first consideration was to be production, with no lowering of standards of quality except as such were allowed by the government. Cost was to be secondary. Foremen were cautioned against permitting their supplies to run low.

A survey today of each department of the mill with respect to technical improvements which have been made to effect an increase in production does not reveal any outstanding advances, with one or two exceptions. Yet a little here and a little there have contributed to the efforts in this direction.

COTTON DEPARTMENT. In an effort to facilitate the grading of the cotton

received by the mill, a high-powered daylight lamp has been installed in the office of the cotton department. Although this might seem to be a negligible improvement, any duck-mill man knows how much closely-graded cotton, properly blended and opened, can contribute to well-running carding and spinning, and how much havoc can be caused by a bad lot.

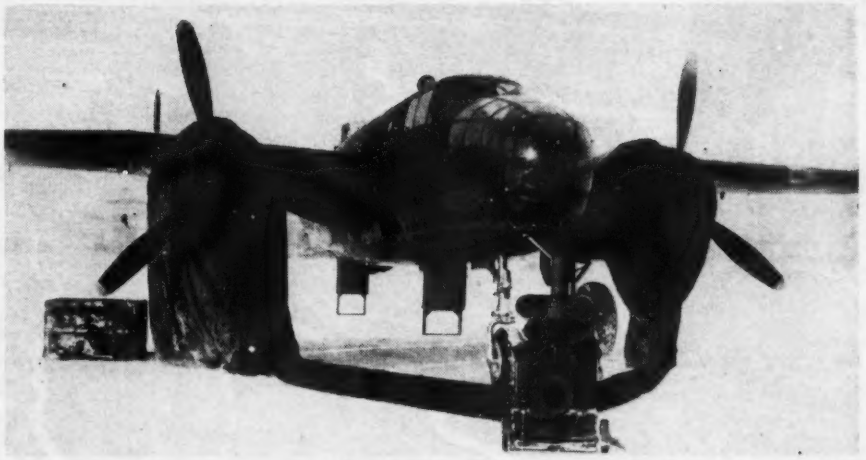
OPENING AND PICKING. Based on present-day standards, the mill already had a good line-up of opening and picking equipment. However, to realize the most good from this equipment, the head section man in this department, a man of long experience and good mechanical ability, has spent the past several months overhauling the opening and picking machinery. For example, the beaters of the vertical openers have been removed, the picks straightened or renewed where necessary, the worn bearings replaced —in fact, the entire machine overhauled and reset. The other machines in this department have had similar attention. Naturally all of this has contributed to the effort to increase production by making the work in the carding and spinning run better.

CARDING, DRAWING, AND ROVING. Even long before the war, the carding, drawing, and roving departments, which of course are under the direction of the overseer of carding, were very efficiently operated; and in the three years of the war to date we do not recall that the spinning department has had to close down for lack of roving for more than a period of three or four hours. This shut-down was during the time when the roving frames were undergoing the regular periodical overhauling, and as many as four frames were stopped at one time by the overhaulers.

A slight change was made a few months ago in the setting of the drawing rolls—just a small increase in the setting, which had the effect of improving ends down in the spinning room.

At the present time a technical change is being made on the cards and on the drawing frames which will have the effect of increasing the stock in the card cans and the drawing cans. While we are not at liberty to discuss this change in detail at this time, the results of such a change are very obvious—chiefly a greater length of sliver without piecing and an increased production of the drawing frames and the roving frames.

SPINNING AND SPOOLING. The major advance in the spinning room has been the installation of air-changing equipment. This followed the installation of long-draft, large-package spinning with individual drives and overhead creel cleaners. Naturally air-changing has made the department a more pleasant one in which to work, has made the spinning run better, and has improved the quality of the yarn. The evil of smoky yarn has been practically eliminated, as the spinning can now run with the windows closed.



Duck plays important part in air warfare. Here a cold army plane is warmed up with help of motor coverings employing fabric which has been made resistant to water, fire, gasoline, and oil. *Army Air Forces Photo*

To match the improvements in the spinning, large-package, high-speed winders have been installed to replace the conventional-type spoolers. The major advantages of this type of winding are not realized in the spooling department, however, but in the twisting department, as will be discussed next.

TWISTING. A considerable change in the twister creels was necessary to accommodate the larger packages from the winders, but this presented no major difficulty. The larger packages enabled the twisters to run more than twice as long between creelings, which effected a considerable increase in production. Naturally, the yarn from the winders ran badly at first and the large packages were difficult to creel; but after a period of adjustment things began to run more smoothly.

Other improvements in the twisting room have included the replacement of the regular cylinder bearings with ball bearings, the installation of separators on certain frames, and the adoption of individual motor drives and of automatic electric knock-off counters.

It is now seldom necessary to remove a cylinder from a frame, with an attendant loss of production.

While the separators are not in general use, they have been installed on certain warp frames making "fine" yarns and on the filling frames. The results are fewer ends down and yarn of a better quality, especially with less fuzziness.

With the automatic knock-off counters, made possible by the installation of individual drives, the lengths from the twisters have been greatly improved, with a considerable reduction in long doffs and that bug-a-boo of the beaming room, short doffs. Of course, the human element has not been entirely eliminated, as the twister hand still has to set the clock by hand on the first doff of a new length; but it is seldom that a counter is set wrong. Once a counter has been set, it will continue to run the same lengths indefinitely, or until it is reset. The savings here are reflected in the beaming room, as has been indicated—especially in a reduction in the number of sets which must be rebeamed because of short doffs and in the number of long doffs which must go into waste or be respooled or spliced.

BEAMING ROOM. Although the beaming room in a duck mill is a small department from the standpoint of the number of machines operated and the number of employees used, all of the warp production must pass through this department and it can quickly become a bottleneck. A slight error at this point, and costly damage may result.

The major improvement in the beaming room has been the installation of a variable-speed transmission and an individual motor for each beamer. Not only has a slight overall increase in the speed of the beamers been accomplished, but the speed has been made comparatively constant after the expansion comb is adjusted to produce even selvages and a smooth, even warp. (While these

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adjustments are being made, for beamer is operated at low speed, after which it is put into high speed and allowed to run at the maximum speed until it is necessary to stop the beamer to put on a cut mark, or for some other reason.) An air brake, operated in connection with the starting pedals, stops the beamer almost instantly when the starting pedal is pressed down or when the safety device is disturbed by any object coming in contact with it.

With these improvements, a beamer tender can operate one machine while another is being creeled; and in this way a considerable increase in man-hour production has been effected.

A short time before hostilities began, this department installed a considerable amount of overhead beam- and warp-handling equipment. Now, with the serious shortage of manpower, the benefits from this equipment are being fully realized—and appreciated by both the workmen in the department and by the management.

WEAVE ROOM. Although there have been no material improvements in the weave room since the war began, it has been possible to capitalize on advances which were made only a short time earlier. Among these improvements were the installation of a number of automatic shuttle-changing duck looms and the changing over from 22- to 32-in. beam heads. The change in the diameter of the beam heads has helped in a number of ways to increase production, as well as to reduce cost and waste. Some of the advantages are: a direct increase in the production of the loom, as the warps will run almost twice as long as those made on the beams with the smaller heads; a reduction in drawing-in and tying-in costs, as the same production can be handled on fewer beams; a reduction in waste, both in that made in starting up the loom and that left on the beam when the warp runs out. The reason for the latter advantage is just as much waste made on the smaller beams as is made on the larger ones, and more of the smaller ones were required. There are fewer warps to be started up by the loom-fixers.

In helping the weave room, the change from small to large beams also helped the beaming room, as the beamer force was required to handle fewer beams and the beamers could run longer before doffing, thus increasing the efficiency of the beamers. We see that an improvement in one department often helps another.

Cotton duck or canvas is prominent among the textiles worn or carried by the soldier — note leggings, axe-head and canteen covers, and haversack.

Official Signal Corps Photo

CLOTH ROOM. Improvements in the cloth room have been rather slow in coming, for many mill men seem to think that the cloth room is of little importance in the processing of the cloth produced by the mill. But a careful study reveals that much has to be done to the cloth after it has been removed from the loom. The operations necessary to process the cloth in this department include inspection, showing of defective goods to each of three shifts of weavers and fixers, trimming, burling, mending, brushing, weighing, making necessary records, handling of samples for laboratory, folding or rolling up on calenders, baling or burlaping in rolls, and branding. Many defective rolls of duck are repaired in such an expert manner that they pass as firsts. This mill has recently installed a new brusher which materially improves the surface of the duck; and next of the advances in this department will be a "roll-up head" with a sewing machine to enable as many as ten rolls of duck to be fed into the brusher at one time, thus increasing the production of this machine.

SHIPPING DEPARTMENT. Formerly the duck had to be trucked through the mill to two points for shipping. The operation of the electric truck through the mill was not only a hindrance to production but constituted an accident hazard as well. Two improvements were effected. With the building of a larger loading platform, all shipping was concentrated at one point; then a hydraulic elevator was installed, opening from the cloth room to the outside of the mill. In this way the loaded truck of cloth is lowered from the cloth room to the ground level, and then on a paved driveway is carried to the shipping department, with a minimum of delay and no interruption of productive operations in the mill.

REPAIR SHOP. Although the repair shop is called upon to assist the productive departments in preparing for an increase in production, it is often the last department to receive attention in a modernization program. In our case, the repair shop finally got its share of improvements. A couple of lathes were replaced with new ones with a capacity for handling heavier work than the old ones. Individual drives were installed on all the machines in the shop, permitting the overhead shafting and belts to be removed, thus improving the lighting and making the shop cleaner. For some time we have been rebuilding our worn loom crankshafts and many other worn parts.

Much repair work and overhauling in the mill is done on Sundays so that there will be less lost time.

LABORATORY. The laboratory had been enlarged and improved not only to handle yarn and cloth tests more efficiently, and with greater accuracy, but to do *control testing* as well. This latter project includes regular periodical checking of the stock from the bale to the finished duck, checking such items as weight, moisture content (expressed as regain based on the dry weight), waste made, variations, and other things. In this way is promoted a smooth flow of production of laps, sliver, roving, single yarn, ply yarn, and cloth, all within close tolerances. Practically all testing equipment, except the lap meter, is located in the laboratory, where testing can be done more efficiently and under proper atmospheric conditions.

GENERAL. The installation of fluorescent lighting throughout the mill has been a contributing factor in the program of increasing our production,

(*Continued on page 192*)

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Government Will Help Mills Solve Problem of RETURNING SERVICE MEN

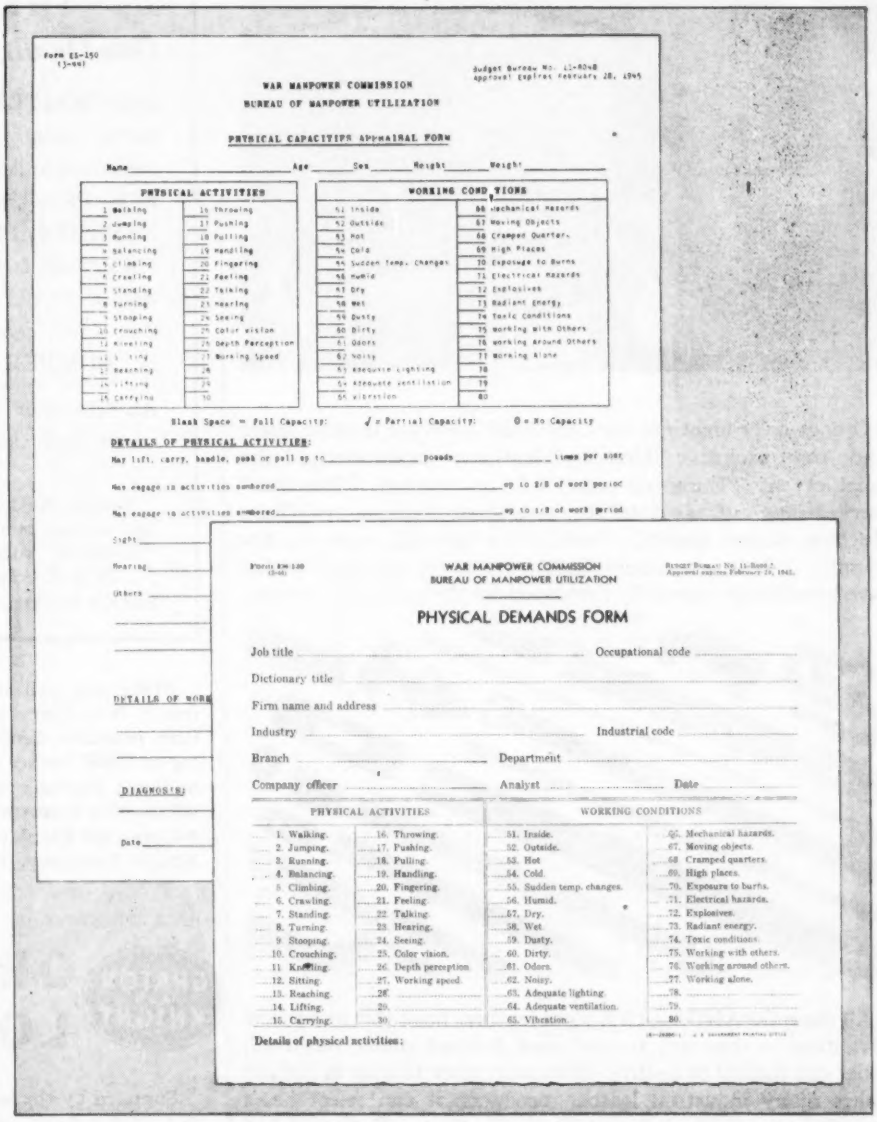
HIGHLIGHTS: Agencies Will Provide Rehabilitation and Training of Textile-Mill Workers — Establishment of Veterans' Division of Mill Personnel Department Recommended—Disabled Veterans Conscientious.

By GLADYS MONTGOMERY
Washington Editor, TEXTILE WORLD

THE PROGRAM for the orderly absorption by industry of discharged service men and women, including those suffering from handicaps falls into two distinct parts, closely integrated. First, there are specific undertakings of a number of government agencies which will be further defined and coordinated by legislation; second, there is the obligation that industry must assume in the actual placement of the uninjured and the handicapped veterans in gainful occupations.

VETERANS' ADMINISTRATION. The government agency which is responsible for the training and education of the war veteran is the Veterans' Administration. This agency has no concern with the employer's problem as such, but its work in taking care of the veteran problem helps the employer also. Under provisions of Public Law No. 16, the Veterans' Administration is responsible for vocational training of veterans who have incurred service-connected disabilities. It is also responsible for determining the degree of veterans' eligibility for compensation, hospitalization, and other benefits. To be eligible for further education and training, a veteran must have served not less than 90 days and have been released from active service because of actual service-incurred injury or disability.

Vocational rehabilitation aims to restore the employability which has been lost because of a handicap incurred in or aggravated by service. Training facilities consist of accredited colleges, universities, technical schools, as well as training-on-the-job. During training and for two months after employability has been determined, government guarantees financial aid at the rate of $80 a month for a single person, $90 a month for a married person, with $5 added for each dependent. Take, for example, the mill owner who has disabled veterans training-on-the-job. These veterans can receive pay, providing that, when such payments are added to the pension, the combined amounts do not exceed the amount the employer is paying a qualified employee for the same work. If the veteran is being over-paid, the excess amount must be deducted from the pension. Training-on-job is provided in the veteran's home community, wherever possible. Institutional training is generally pro-



WAR MANPOWER COMMISSION
BUREAU OF MANPOWER UTILIZATION

PHYSICAL CAPACITIES APPRAISAL FORM

Name _____ Age _____ Sex _____ Height _____ Weight _____

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
1 Walking	16 Throwing	51 Inside	66 Mechanical Hazards
2 Jumping	17 Pushing	52 Outside	67 Moving Objects
3 Running	18 Pulling	53 Hot	68 Cramped Quarters
4 Balancing	19 Handling	54 Cold	69 High Places
5 Climbing	20 Fingering	55 Sudden Temp. Changes	70 Exposure to Burns
6 Crawling	21 Feeling	56 Humid	71 Electrical Hazards
7 Standing	22 Talking	57 Dry	72 Explosives
8 Turning	23 Hearing	58 Wet	73 Radiant Energy
9 Stooping	24 Seeing	59 Dusty	74 Toxic Conditions
10 Crouching	25 Color Vision	60 Dirty	75 Working with Others
11 Kneeling	26 Depth Perception	61 Odors	76 Working Around Others
12 Sitting	27 Working Speed	62 Noisy	77 Working Alone
13 Reaching	28	63 Adequate Lighting	78
14 Lifting	29	64 Adequate Ventilation	79
15 Carrying	30	65 Vibration	80

Blank Space = Full Capacity; √ = Partial Capacity; 0 = No Capacity

DETAILS OF PHYSICAL ACTIVITIES:

May lift, carry, handle, push or pull up to _____ pounds _____ times per hour

May engage in activities numbered _____ up to 2/3 of work period

May engage in activities numbered _____ up to 1/3 of work period

Sight _____

Hearing _____

Others _____

DETAILS OF WORK

DIAGNOSIS

Date _____

WAR MANPOWER COMMISSION
BUREAU OF MANPOWER UTILIZATION

PHYSICAL DEMANDS FORM

Job title _____ Occupational code _____

Dictionary title _____

Firm name and address _____

Industry _____ Industrial code _____

Branch _____ Department _____

Company officer _____ Analyst _____ Date _____

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
1. Walking.	16. Throwing.	51. Inside.	66. Mechanical hazards.
2. Jumping.	17. Pushing.	52. Outside.	67. Moving objects.
3. Running.	18. Pulling.	53. Hot	68. Cramped quarters.
4. Balancing.	19. Handling.	54. Cold.	69. High places.
5. Climbing.	20. Fingering.	55. Sudden temp. changes.	70. Exposure to burns.
6. Crawling.	21. Feeling.	56. Humid.	71. Electrical hazards.
7. Standing.	22. Talking.	57. Dry.	72. Explosives.
8. Turning.	23. Hearing.	58. Wet.	73. Radiant energy.
9. Stooping.	24. Seeing.	59. Dusty.	74. Toxic conditions.
10. Crouching.	25. Color vision.	60. Dirty.	75. Working with others.
11. Kneeling.	26. Depth perception.	61. Odors.	76. Working around others.
12. Sitting.	27. Working speed.	62. Noisy.	77. Working alone.
13. Reaching.	28.	63. Adequate lighting.	78.
14. Lifting.	29.	64. Adequate ventilation.	79.
15. Carrying.	30.	65. Vibration.	80.

Details of physical activities:

The useful forms which might be employed by a veterans' department established in the mill, as drawn up by War Manpower Commission.

This unique design of check strap is a Graton & Knight development which, together with the superior service provided by "Hairitan" leather, has resulted in such performance records as: 8 months and better average life in a group of Southern mills, all running two shifts.

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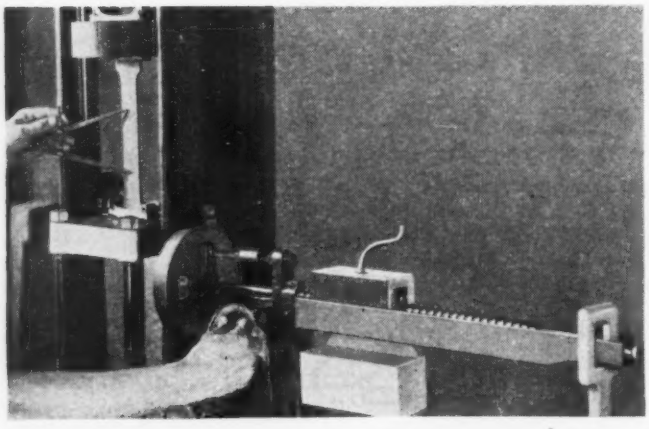

Orange color identifies the ORANGE LINE of loom leathers made from exclusive "Hairitan" leather — acknowledged the equal of any "European-type" hair-on tannage. "Hairitan" check straps average 6500 lbs. tensile strength on the Olsen Machine shown above . . . weigh less (giving more to the pound) . . . have extremely little permanent stretch . . . and have a resiliency especially developed for the particular service.

All these ORANGE LINE loom leathers have this important advantage — they are tanned *and* finished under one roof, under one control of quality. Moreover, since Graton & Knight makes many industrial leather products, it can select hides according to strict, individual specifications. Each finished product is the result of manufacturing steps all controlled by these specifications.

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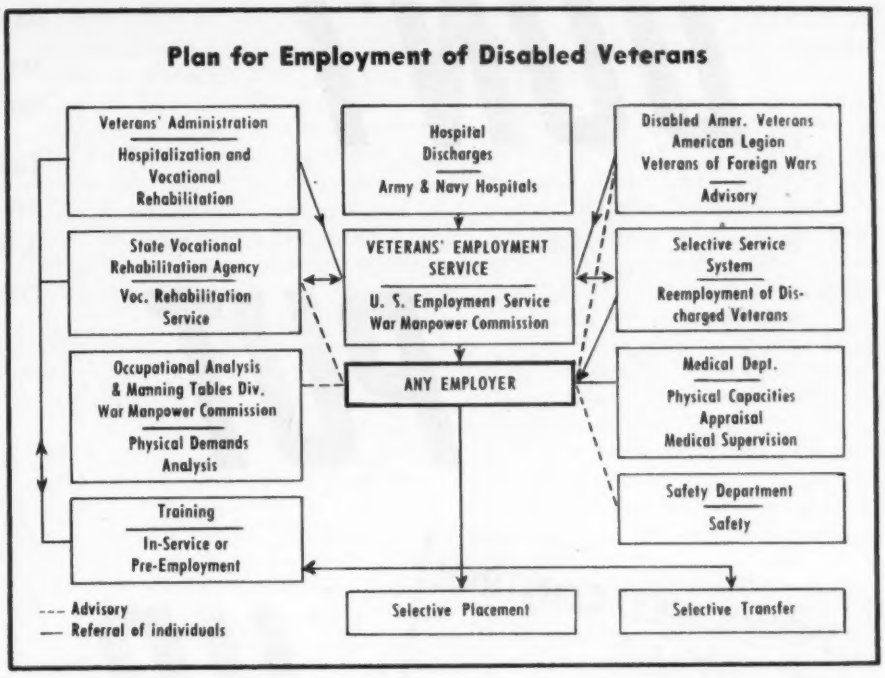
vided in the institution nearest to the veteran's residence.

TEXTILE TRAINING. Selection of an occupation in which rehabilitation will be effected, such as textile-mill work, is based upon consideration of the individual veteran's education, vocational experience, abilities, personal desires, and present disability. If he selects textile training, he may receive such training either in schools or in the training-on-the-job program. No course of instruction can exceed four years in length and cannot be given beyond six years after termination of the war. At the present time a considerable number of disabled veterans apparently prefer to take advantage of the high wages paid in certain war plants.

The operation of the vocational rehabilitation program has been decentralized to the field stations of the Veterans' Administration, one in each state. The VA will not set up and operate trade schools, professional schools, etc., but will make use of those already in existence. Recently it was announced that rehabilitation centers will be established at colleges and universities to provide job counseling and to arrange vocational training wherever advisable.

The Army and Navy rehabilitation program aims primarily to restore the soldier's health either for continued active service or for discharge. During the convalescent period he is offered whatever education and vocational training seems feasible. Even such training as involves occupational therapy may encourage the soldier to go on with a skill he became interested in at this time. For example, a veteran may use a hand loom during the convalescent period and want to get textile training after he is discharged.

G. I. BILL OF RIGHTS. A part of the responsibility of the Veterans' Administration, and to date, a confusing job, is the administering of provisions set up in the recent GI Bill of Rights, signed by the President on June 22 (Public Law 346). Among other provisions, it states that any veteran whose education was interrupted or interfered with or discontinued because of his entry into military service is entitled to the educational benefits provided under the law. Service of 90 days is required and the course of study must be started not later than two years after the date of discharge or termination of the present war, whichever is later. While taking the course, the single veteran gets an allowance of $50, and $75 a month if he has a dependent. The institution gets an allowance of not more than $500 per year for each veteran. This training is primarily for physically able young men, who were under 25 years of age when they entered the service, who want to finish or start college training, or who want to learn a trade. Disabled veterans may come under the GI Bill of Rights, but, as long as they have the advantage of the Veterans' Administration program, they get more allowance while training there.



WAR MANPOWER COMMISSION. The responsibility for placing veterans in new jobs falls on the Veterans' Employment Service of the War Manpower Commission, which operates from national headquarters through a state representative down into the communities through 1,500 local offices of the U. S. Employment Service.

The Reports and Analysis Service of WMC is developing labor-market information to assist veterans who desire to work in other areas or who have skills that cannot be utilized locally. The information is being made available in the form of industry and area statements covering all communities with over 100,000 population. Each area statement describes the nature of the industries in that community and the anticipated increases or decreases in employment, by industry, *with some indication of employment prospects in the principal firms of each area.*

WMC is developing aptitude tests to assist in guiding veterans into the positions for which they are best suited. They will be used in all USES offices.

SELECTIVE SERVICE SYSTEM. The Veterans' Employment Service closely cooperates with the Selective Service System. Under the Selective Service and Training Act of 1940, as amended, the Selective Service System is responsible for requiring employees to rehire persons called into armed forces and prescribe penalties for violation of the law. Upon request, a veteran who is still qualified to hold his old job must be rehired if he applies within 40 days after leaving the service (except in case of a temporary position). The act stipulates that he shall be rehired without loss of seniority, insurance, or other benefits, unless the employer's position has changed so that it is impractical. If several veterans have held a certain position before being inducted into military service, the first one who held the job has first claim on it, and so on for the second, third, and fourth. However, there is some confusion as to priority of job rights, and legislation may be necessary to set it up in an orderly manner. If an employer does not want to rehire an employee and has a good reason, every effort will be made to place that employee in another position. If an employer simply refuses to take on a former employee, the matter could go to the Department of Justice.

As an aid to both employers and discharged personnel, the War Department will send cards to previous employers notifying them of the vet-

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erans' separation from the Army. The cards will be used where the records of officers and enlisted men indicate they left employment to enter the Army. The Office of War Information is making available to veterans a guide book entitled, "Your Rights and Your Benefits," described as of handy use for veterans of the armed forces and their dependents.

FEDERAL SECURITY AGENCY. Veterans with non-service-connected disabilities receive vocational training through the Federal Security Agency, Office of Vocational Rehabilitation. The program is carried on through the facilities of State Vocational Rehabilitation Agencies. The Veterans' Employment Service cooperates by referring eligible veterans to the agency for training and by assisting in their placement when training is completed.

OFFICE OF WAR MOBILIZATION. In order to coordinate the activities of all Government agencies having to do with retraining and reemployment of persons discharged or released from the Armed Services and other war work, a Retraining and Reemployment Administration was set up recently in the Office of War Mobilization in Washington. It is headed by Brig. Gen. Frank T. Hines and was established under Executive Order of President Roosevelt, based on recommendations in the Baruch-Hancock report. So far it has functioned principally as a policy board, and an advisory board for committees of Congress and its duties are not too clearly defined. Pending legislation would establish its position and duties in the postwar set-up.

SUGGESTIONS TO INDUSTRY. Industry's recognition of the place veterans must hold in the rehiring and rehabilitation program, with special consideration for the disabled veteran, is regarded by government officials as of equal importance with the work of the agencies. Among the suggestions of government representatives are:

1. To extend the 40-day period for rehiring of employees. Several companies have gone so far as to allow the veteran a year to apply for his old job. That may be too long, but some leniency may reward the employer in dollar value and personal satisfaction.

2. To send a letter of welcome to the veteran from the mill owner when he comes on the job.

3. To get from the U. S. Government Printing Office or from the local USES office, if possible, a copy of two handbooks—one entitled "Special Aids for Placing Navy Personnel in Civilian Jobs"; and the other, "Special Aids for Placing Army Personnel in Civilian Jobs." Placement personnel in the mills will be better able to relate the knowledge and experience acquired in the armed forces to civilian-job requirements. Military classifications are presented in terms of duties performed and the knowledge, skill, and ability required. Civilian occupations most closely related to military classifications are shown.

4. A veterans' department should be set up in the various mills, headed by a veteran, if possible. This department could come under personnel. All veterans should go through this section first. After a check is made on the veteran's physical condition, his record in the service, the nature of his disability, if any, there should be a matching of individual physical capacity against specific job requirements. If a man returns highly nervous, for example, it may not be wise to place him in his old job. See WMC's suggested form for recording physical capacities of each veteran and a second one for listing physical demands of the job, reproduced herewith—from Bureau of Manpower Utilization.

5. The veteran representative should follow through to see that the veteran is placed in the right job and that the mill is taking advantage of and crediting his full capabilities.

6. The employer should not underestimate the value of the disabled veteran. He is often more conscientious and less likely to stay off the job.

7. Labor-management committees may be used to help solve some of the problems connected with reemployment of war veterans. Of course, L-M committees do not enter into the problems of seniority rights nor other matters which come within the purview of the collective-bargaining agencies.

8. Note accompanying chart giving outline of in-plant plan for selective placement of disabled veterans and also the chart with plan for the employment of disabled veterans—both prepared by K. Vernon Banta of the Bureau of Placement, WMC. According to Mr. Banta, USES will have placed nearly 500,000 physically handicapped persons in industry by the end of the year.

Outline of In-Plant Plan for Selective Placement of Disabled Veterans

Job Analysis	Analysis of performance requirements of jobs in specific terms—physical demands and working conditions, tasks performed, aptitudes, skills, experience, education, other qualifications required by the job.
Capacities Analysis	Analysis of qualifications of worker, including skill, aptitude, education, experience, personal characteristics, and physical capacities; physical capacities to be appraised in terms comparable to physical demands of the job and suitability of working conditions.
Placement	Placement of workers on selective basis matching requirements with qualifications; considering physical capacities in relation to physical demands and working conditions; matching experience, education, aptitudes, skills, in relation to requirements of the job; no deviations from plant standard of job performance.
Training	Training in vocational educational, vocational rehabilitation, apprentice, on-the-job, or other methods as required by the individual.
Transfer	In-plant transfer of workers on same performance standards as original assignment; limitation imposed on transfer from assigned job pending clearance by medical and safety departments.
Supervision	Participation of supervisory force in physical demands analysis; training of supervisory force in objective attitude toward handicapped and special problems in supervision of certain types of handicapped, e.g., blind, deaf, and mentally handicapped.
Reengineering	Alteration of machine controls, etc., or duties of the job to be made only if no suitable or safe job available for worker. Same standard to be followed in placement under reengineering as in regular placement.
Follow-Up	Follow-up of placement to insure suitability of occupation and satisfactory progress on the job.
Records	Maintenance of minimum records of experience—accident, absentee, turnover, production—for performance evaluation purposes.

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Handling Varied-Length Rayon in BLENDS WITH WOOL

HIGHLIGHTS: Concentration of Fiber of One Length Eliminated in Woolen and Worsted Mills — Less Pins Required in Gilling — Ratch Just Short of Longest Fibers.

By ROBERT A. SMITH
Head of Worsted and Woolen Div., Textile Research Dept., American Viscose Corp.

THE IDEA OF VARIED-LENGTH RAYON STAPLE was the outgrowth of extensive observation of the characteristics and behavior of both natural and man-made fiber. Wool fiber possesses many valuable spinning characteristics. As may be observed in the accompanying photograph, varied-length rayon staple closely approaches the staple diagram of wool.

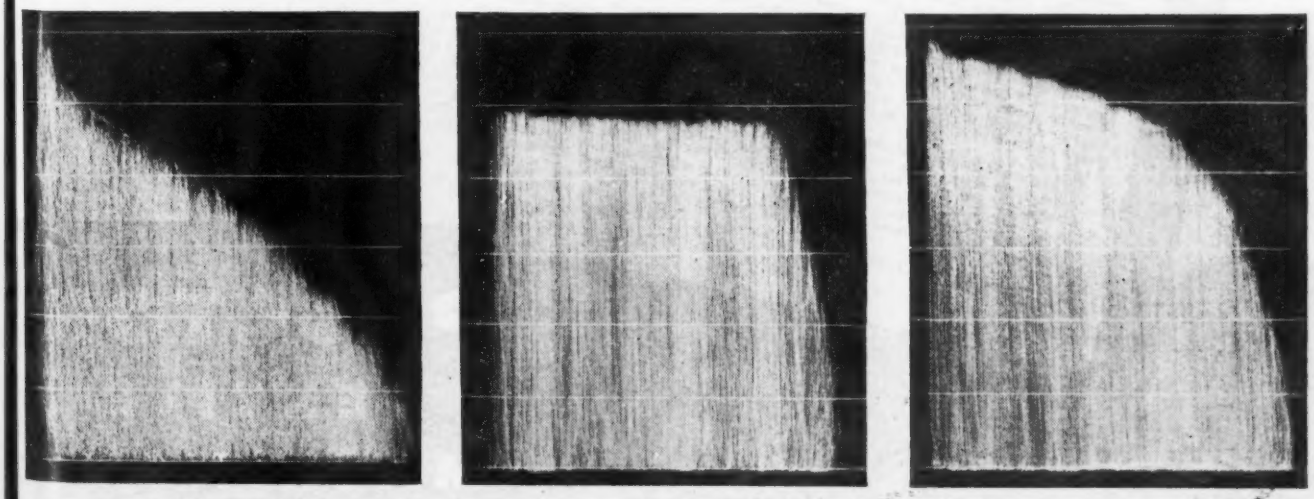
PHYSICAL PROPERTIES. Before proceeding further, the physical aspects of this product should be reviewed. Varied-length rayon staple is available, at present, in viscose type, either bright or dull luster. The original development was planned as an improvement which would aid worsted blending. Subsequently the woolen and blanket industries showed an interest, and the advantages of varied-length staple in those fields have resulted in wide acceptance. Interest in this type of rayon staple is confined to those mills which wish to blend it with wool; therefore, the only sizes now made are 3.0 and 5.5 den., and in the lengths listed in the accompanying table.

In addition to the lengths mentioned, an experimental description is being made in lengths suitable for blends with wool on cotton spinning machinery.

The photograph shows the difference between the various lengths of fiber in varied-length staple and those in evenly cut staple. The similarity to the various fiber lengths found in wool is also apparent. One of the advantages is the fact that the new product is a correctly proportioned blend composed of hundreds of different fiber lengths ranging from a predetermined maximum to a predetermined minimum. Thus there is no chance of a concentration of any one length. This is quite important for thorough blending, particularly on the worsted system.

In fact, better blending with wool and a more evenly spun yarn are the two benefits claimed for varied-length staple. Yarn evenness carries with it better weaving efficiency and lower mending costs. For cross-dye effects or stock-dyed mixtures, a better blend of fibers produces obvious advantages.

PROCEDURE ON THE BRADFORD SYSTEM. In outlining the correct procedure for manufacturing a blend of rayon and wool, it should always be borne in mind that this procedure is not the same as it would be for a 100% worsted yarn. In the United States, blending on the worsted system is usually accomplished by blending rayon top with wool top. In following this practice, it is advisable to give one or two blending operations on balling-head gill boxes before moving on to the two-spindle gill box. In all of these gillings, it is recommended that the forward speed of the fallers be no greater than that of the stock entering them. In other words, there should be absolutely no pin draft. This is a rather hard condition to fulfill when open gill boxes are used. Therefore, intersectors are recommended for this operation.



Comparative staple diagrams of wool, standard Fibro and varied-length staple Fibro. A 60-62s oil-combed worsted top is shown at the left; a 5.5-den., 5-in. dull Fibro top at center; and a 5.5-den., 3½- to 6-in. bright Fibro top at right.

Here's what TEXTILE WORLD *reports on the* PROCTOR SUPER PICKER

HIGH-PRODUCTION PICKER Installed at Frankford

HIGHLIGHTS: Production of 5,000 to 6,000 lb. per hr. Obtained When Picking Coarse Wools.

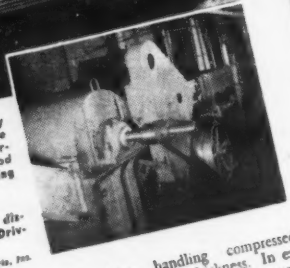
By HAROLD E. REED
Assistant Editor, TEXTILE WORLD

PRODUCTION OF WOOLEN FABRICS for the armed forces has been expedited at Frankford Woolen Mills, Philadelphia, Pa., by installation of a heavy-duty, high-production picker in the opening room. Wool was formerly opened and blended by running through a fearnaught picker; and because of recent machine changes in other parts of the mill, the picker became a bottle-neck. With the new picker installation, production is running from 5,000 to 6,000 lb. per hr. and the fearnaught has been eliminated.

This Super-Picker, designed and installed by Proctor & Schwartz, Inc., is an 8-bar mixing picker. Bars are not interchangeable with each other, as a stagger of teeth is obtained so that stock being delivered by the feed rolls is worked on every ¼ in. One set of feed rolls is provided. The top roll is of the cock-spur type to hold the stock; whereas the bottom roll is fluted. Feed-roll speed may be varied from 9 to 40 r.p.m. by means of change gears. The cylinder is of all-steel construction and 48 in. wide; occasionally this picker is provided with a 60-in. cylinder. Speed of the cylinder is 900 r.p.m., and a 15-h.p. motor on a pivoted mounting and driving through V-belts provides power. The pivoted mounting and V-belt drive is of distinct advantage when the picker is operating at top output because it absorbs much of the strain and shock placed on the unit when large chunks of wool pass into the feed rolls.

The picker at Frankford Woolen is located in the center of the opening room. Bags of wool are laid out about the feed-apron in the same manner as a bale-mix is prepared in the opening room of a cotton mill. Handfuls of wool, taken from various bags in order, are laid on the feed apron. The stock is oil-sprayed before it passes into the feed rolls. Picked stock is blown to storage bins located along the side of the room where it is allowed to stand. Stock is then drawn from the storage bin and given one or two additional runs through the picker, depending on requirements of the lot being processed. An overhead condenser drops the stock onto the feed apron for the second and third runs.

At least three men are required to lay a mix on the 10-ft. feed table of the Proctor Super-Picker when it is operating at full capacity. Note spray head and nozzles above feed rolls for oiling stock.



Close-up showing cylinder and discharge end of the Super-Picker. Driving motor is on other side.

Photos courtesy of Proctor & Schwartz, Inc.

PRODUCTION TEST. A test run, intended to demonstrate the high productive capacity of the Super-Picker, was run for the writer.

A blend consisting of 11 bags of 52s quality and two high-compress bales of 48–52s stock-dyed wool was placed about the feed apron. The blend weighed 2,800 lb. Three to five workers were required to throw handfuls of wool on the feed apron, the picker handling compressed chunks one foot in thickness. In exactly 14 min. after starting, the complete lot of 2,800 lb. had been run. A production of 200 lb. per min.!

While such production seems impossible—a picker handling 12,000 lb. of wool per hour—it must be remembered that it was operating under ideal conditions and being pushed to its maximum capacity. With ordinary work the picker will, however, handle up to 6,000 lb. per hr. Cleaning requires only 20 min.

Postwar plans of Frankford Woolen Mills include an installation of a second picker so as to permit two runs before the stock is blown to the bins.

Other picker installations made by Proctor & Schwartz include a blending system whereby the picker feeds to an overhead condenser which distributes the stock on the feed apron of a pit feeder. The pit feeder feeds another Super-Picker or a fearnaught.

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TEXTILE WORLD, JULY, 1944

The story reproduced at the left appeared on page 93 of the July issue of TEXTILE WORLD... it is reproduced here with the permission of TEXTILE WORLD and FRANKFORD WOOLEN MILLS. To attempt to make any comment on the contents would be committing the proverbial sin of "gilding the lily". If you'd like further details on how well this Proctor Super Picker can fit into your production plans, a telephone call or letter will start details on the way to you immediately.

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LENGTHS OF VARIED-STAPLE RAYON

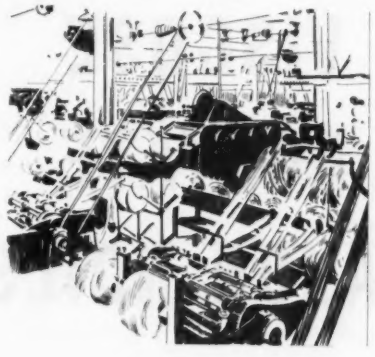
Variation in Staple Length — Inches			System	Suggested Blends
5 in.	to	7 in.	Bradford system	With coarse wools
3½ in.	to	6 in.	Bradford system	With 56s — 58s
3½ in.	to	5 in.	Bradford system	60s and up
2 in.	to	3½ in.	French system and Woolen system	
1½ in.	to	2¾ in.	Woolen system and blanket manufacturers	

The number of pins per inch in the fallers is of importance. No definite rule can be set down as to the number of pins because the weight of sliver being fed can vary over such wide extremes. One general rule that is always safe is, *Use less pins than you would in gilling 100% wool.* It is imperative when gilling a rayon-wool blend to give the stock plenty of room in the pins, and it is far better to use too few pins than too many. If rayon is held by pins that are set too closely together, it will resist drafting, result in broken fibers and neps, and is one of the most frequent causes of "faller" marks in the work.

The twist inserted in the two-spindle gill box and in all the following drawing operations should be carefully controlled. The range of acceptance of twist in a rayon-wool blended sliver is narrower than for all wool. If twisted too little, it will slip. This naturally results in uneven weight because a certain amount of uncontrolled drafting will take place between the spool in the creel and the back roll of the frame. On the other hand, a little too much twist will cause the fibers to bind and proper drafting will not take place between the back rolls and front rolls of the frame.

As already stated, the difference between too much twist and too little twist is narrow in a rayon-and-wool blended sliver, when compared with the same range in an all-wool sliver. Again no general rule for twist can be given because the weights of sliver vary so much in the different operations and each mill runs its own particular series of sliver weights. From previous observations it appears that most errors are made on the side of having too much twist. The question of twist must be given careful supervision in running blends.

In setting the ratch for varied-length rayon staple, ratch according to the length of the longest fiber present. The selection of the proper varied-length staple to compliment the wool with which it is to be blended is most important. Some diagrams of wool top show a tip composed of extra long fibers. Many mill men make a practice of setting their ratches in such a manner that these exceptionally long fibers are broken. In such a case, we would recommend a varied-length



rayon in which the longest fibers are just short of such a roll setting.

In an earlier article dealing with worsted processing, and appearing in the October and November, 1942, issues of TEXTILE WORLD, it was recommended that a rayon staple be chosen that was as long as, or possibly a little longer than, the longest fiber in the wool diagram. Since the advent of varied-length staple, it is necessary to modify that recommendation slightly. The longest varied-length rayon fiber should be as long as the longest wool fiber, disregarding the extreme tip in a wool diagram. However, the variations to be found in diagram of wool top are so numerous that where there is any doubt in this respect the rayon manufacturer should be consulted.

The procedures suggested for varied-length staple are exactly the same as those given for evenly cut staple. The foregoing thoughts are given for the purpose of calling attention to the cardinal points that must be borne in mind in running rayon blends on worsted machinery.

The chief value of varied-length rayon staple is the fact that its advantages are all self-contained. Any manufacturer who is getting satisfactory results from the use of evenly cut staple will, undoubtedly, get better results by using the appropriate varied-length type of rayon staple.

VARIED-LENGTH STAPLE IN WOOLENS. In the woolen system of yarn making, it is not necessary to treat varied-length staple any differently from evenly cut staple. As in the case of worsted, the advantages of varied-length staple are entirely self-contained and will make themselves evident in the normal manufacturing operations. This statement has foundation in a report from the manufacturers of varied-length staple who point out that the majority of their woolen and blanket customers prefer, and are taking, their requirements in the varied-length description.

This preference was determined by a number of progressive mills after extensive trials in which ends down per hour in carding and spinning were counted. Because of better blending characteristics, the varied-length staple was found to reduce materially the ends down in both of these operations. In addition to this the better blending produced a more evenly spun yarn. As in the case of worsteds, this more evenly spun yarn resulted in better loom efficiency and a fabric with fewer imperfections.

ANDREW K. HENRY

★

RAYON TOPMAKER

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158 SUMMER STREET

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FOREMEN CONFERENCES Can Speed Up Production

By JAMES N. SCOTT
Personnel Manager
Minneapolis Knitting Works

HIGHLIGHTS: Increased Plant Efficiency Results From Bi-weekly Meetings—Supervisors Are Scheduled to Present Suggestions or Problems at These Meetings—Major Changes in Plant Practices Follow—Quarterly Forum Meetings—Confidence Between Management and Supervisors Increased.

EVERY EMPLOYEE AT MKW these days has his mind on increased production. Everyone, no matter what his job, is working harder, turning out more production per minute, per hour, per day.

Cognizant that sustained volume and quality production must depend, in no small degree, upon the overall efficiency of foremen, the management recently undertook a program of periodic conferences aimed at making every foreman more conscious of his responsibility, instilling in him the spirit of increased production, bringing him into closer contact with management itself. The results of this program, in terms of increased plant efficiency, have been remarkable, to say the least.

Hitherto, in the 53-year history of the Minneapolis Knitting Works, few meetings had ever been held which allowed top management and supervisors to exchange their views. Those which had been conducted were held at random. A representative of management merely outlined company policies, asked for comments, and if none was forthcoming, the meeting closed. There was, however, as management well knew, plenty of talk between these sporadic and rather austere meetings. Supervisors who had ideas would discuss them with fellow workers in hushed tones. Though management would have been glad to hear these ideas, the fact was that supervisors attending the meetings were frozen into silence by the obvious truth that they had not been specifically invited to outline and discuss their suggestions.

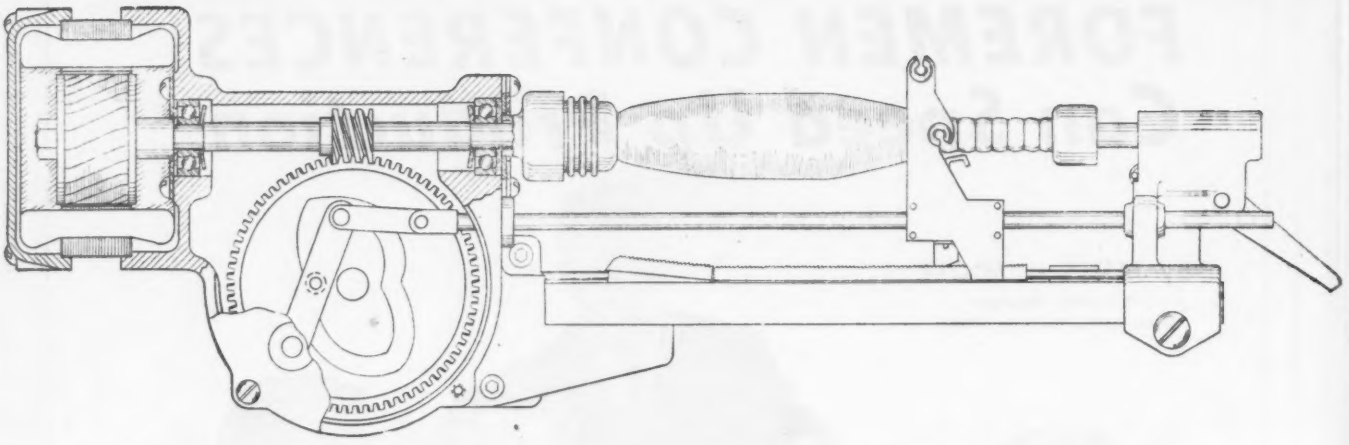
This was the problem that faced MKW, and last fall the management decided to do something about it. Supervisors, it was agreed, must have a chance for individualistic expression. Somehow the aims and objectives of supervisors and top management had to be brought together and coordinated into a working whole.

STARTING NEW PROGRAM. The key to the solution lay in the fact that TWI had recently concluded a series of job classes on J.I.T., J.R.T., and J.M.T. in the plant. Supervisors had shown enthusiastic response to this "problem" type of meeting, and on Sept. 12, 1943, a "send-off" banquet

The Men Shown Above

E. L. Thomas, vice-president in charge of production, goes over the blueprints with plant foremen. Reading from left to right: E. L. Thomas; Marvin Soderberg, cutting foreman; James N. Scott, personnel manager; Arlo Jensen, finishing foreman; and Ted Olson, finishing foreman. The new plant layout in planning stage resulted from the foreman conferences.

ABBOTT AUTOMATIC QUILLER



A low voltage three phase motor drives the spindle directly

Detectors stop motor when bobbin is full or thread breaks

Double-throw cam gives overlapping layers of wind

Greatly improved weaving results

Diameter and shape of bobbin easily and accurately controlled by feeler working against a stationary rack

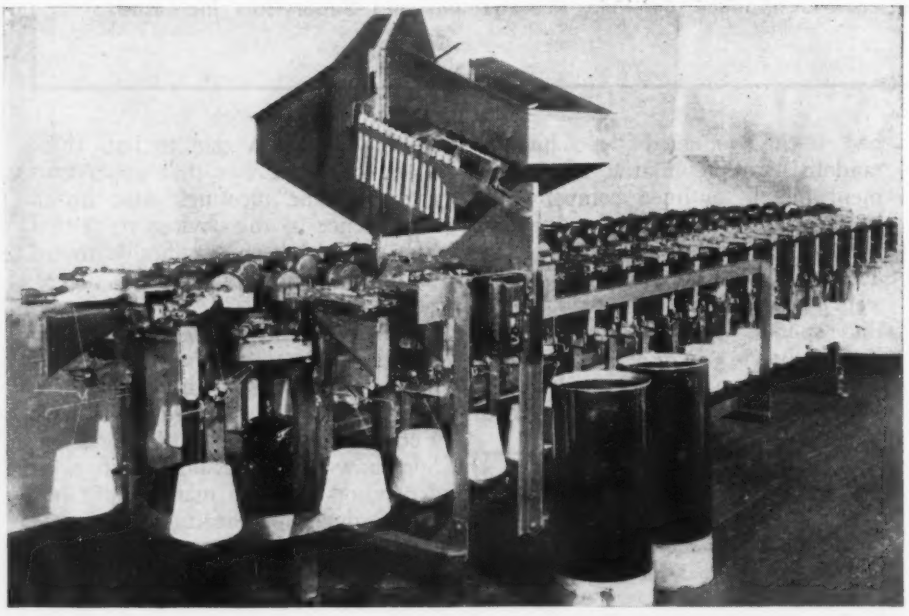
Bunch is controlled by making one adjustment instead of adjusting all winding units.

Spindle speeds up to 5,000 RPM

Winds cotton, worsted, woolen, silk, rayon, etc.

Empty bobbins poured into one large hopper and are sorted and fed automatically

Low investment cost due to simple construction of winding units and use of ONE automatic head to serve all spindles



PRODUCTION:

2,000 bobbins per hour by one operator

ABBOTT MACHINE COMPANY

WILTON, N. H.

Southern Representative, L. S. Ligon, Greenville, S. C.

was held attended by all production supervisors, mechanics, employees' union representatives, vestibule training instructors, and top executives, in which a plan for regular bi-weekly meetings was broached in which supervisors would be discussion leaders. Regularly scheduled speakers would lead each bi-weekly conference. The conference was to be held in the mill cafeteria directly after work, lasting from 5 to 7 p.m., at which time refreshments would be served.

The incentive for working out an idea was obvious. When a supervisor worked out a suggestion and presented it to the group, it would be his idea and his alone, and he would get all due credit for it. Significant too, was the opportunity for each supervisor to improve his department's production record through new, modern, and sound ideas. To date, not a supervisor has failed to present some worthwhile idea in his turn!

Suggestions or problems are the two principal items considered at these bi-weekly conferences. If a suggestion, the supervisor presents an analysis of the idea, its possibilities, roughly estimates its cost, and may even prepare a working model. His suggestion must entail cost reduction, increased production, improved product, improved working conditions, or greater safety. On the night he is slated to speak, he will present all the merits of his suggestion, show his working model, and outline his estimate of the effect his suggestion will have on the "M" picture.

When he has fully outlined his idea, the other members of the group are invited to lend their assistance. Because most ideas will have an important influence on more than one department, this aid is highly important to the functioning of the program. "Bugs" in the suggestion which might work to the disadvantage of another department, are immediately sighted and corrections made accordingly. By coordinating the idea with the work of another department, the original idea may become far more important and the whole project of greater value to the organization. An important factor in the capable handling of this giving and taking of advice is the make-up of the group, which includes not only production supervisors, but mechanics who supply "know how" to the discussion, and union representatives who can give a measured estimate of the employee's reaction to a new plan.

Women's time-study demonstration given for the foremen's and forewomen's benefit. In this photograph, subject of time study is Ann Quicksell (second from left); taking time study is Murray McLagan (at left) and Ruth Paulson (third from left). Author of article, personnel manager J. N. Scott, is standing (fifth from left).

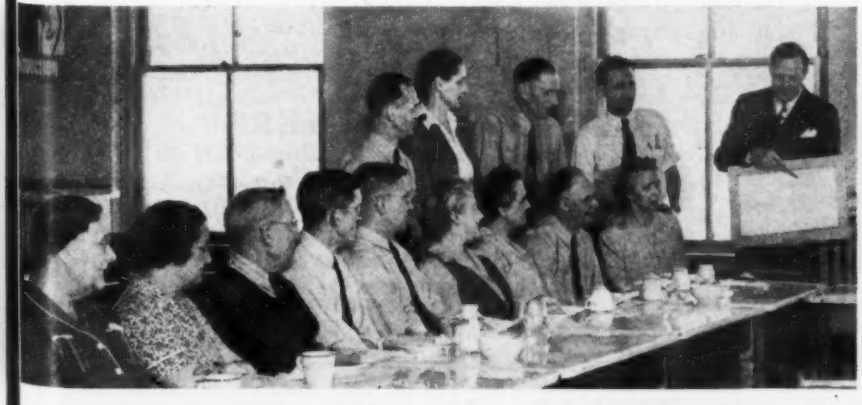
Valuable too, are the solutions offered to problems. If a supervisor, for example, is perplexed by some problem in his department, he lines up the argument from all angles and presents it to the group. The group then proceeds to help him solve his problem. In some instances, the problem actually becomes a suggestion and important results are obtained from it through the group participation.

PLANNING THE MEETINGS. Coordinating the meetings is E. L. Thomas, vice-president in charge of production, who opens each meeting with a few remarks, usually focused upon some current national textile problem, on customer demand, or on the future of the mill. Graphs, charts, and illustrations are employed to drive home his points on mill production. He uses all manner of comparisons to show operatives' productivity, machine and mill capacity, and the level of present production. Foremen and forewomen find this kind of presentation informative and interesting. It has developed lively competition among the supervisors. It has also helped, through the supervisors' appeal to the operatives, in pointing the argument for more production.

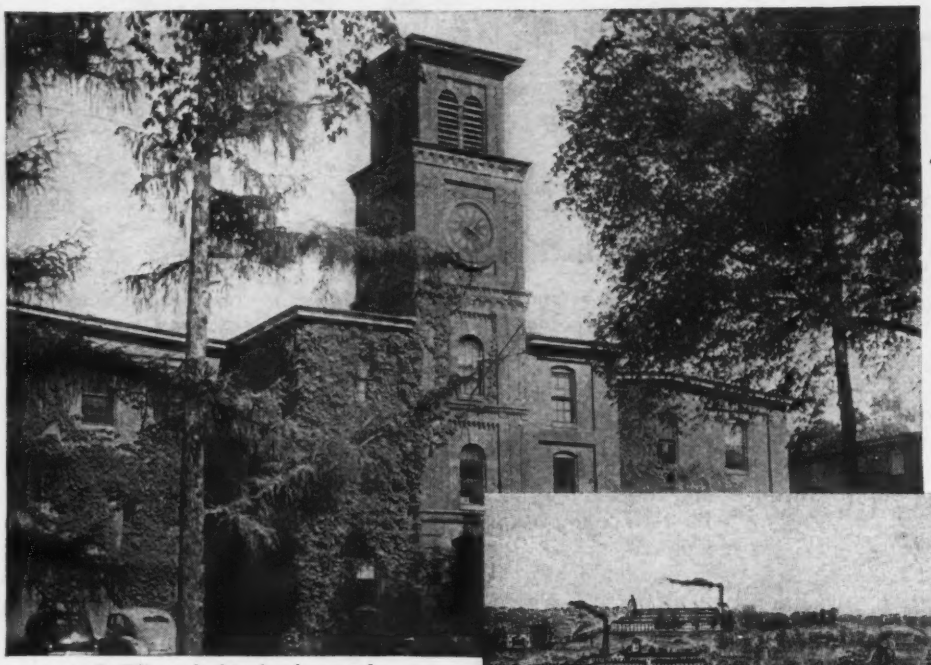
Mr. Thomas also acts as arbiter if the discussion reaches a point where authoritative answers are necessary. At the conclusion of the conference, he summarizes the suggestions which have been made, touches on their respective influence on the mill, applauds suggestors, and names speakers for the next meeting.

Occasionally, a gathering varies from the usual form, and is planned as an "educational-instructive" meeting. Suggestions, in so far as definite projects are concerned, are abandoned, and a discussion leader takes over whose talk revolves around mill procedures, company policy, or methods of instruction. A notable example of this type of meeting was recently held for the purpose of clarifying the time-study set-up. Foremen and forewomen knew what time study was and how its rates applied to operations, but they did not know the technical detail of taking a time study and setting a rate. An actual time study was taken during the meeting—the time-study man and his subject were both members of the group.

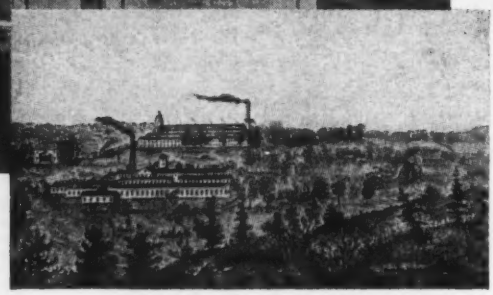
The actual clock readings (continuous) were then copied from the time-study sheet to a large blackboard. Rating factors and allowances were shown and worked out. All reasons for the grading of the operative were out-



E. L. Thomas, vice-president in charge of production, conducts and opens each meeting. He uses charts, graphs and other media to get his points across.



Building which today houses the Pioneer Parachute Co.



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NOW—IN THE 106TH YEAR of manufacturing fine textiles—Cheney Brothers look forward to the years ahead with more vigor and more new ideas than ever before.

These mills—which for over a century have produced distinguished fabrics for America's homes and wardrobes—are now largely engrossed in filling urgent military needs.

But Cheney research and planning goes on uninterruptedly. Amazing new developments in yarns and fabrics for the nation's homes and industries will go into full production as soon as Victory is won.

Remember to "check with Cheney Brothers" when making plans for business after the war.

And don't forget, the war will end sooner if we all buy—and keep on buying—War Bonds!

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MILLS AT MANCHESTER, CONN.

ALSO AT MANCHESTER, CONNECTICUT, A SUBSIDIARY...PIONEER PARACHUTE COMPANY

Second-floor sewing room—installation of progressive bundle system.

lined, with his effort, skill, consistency, and the job conditions explained in detail. Questions were answered at the completion of the demonstration, and, as a result, a much clearer picture of time-study procedure obtained.

IMPROVEMENTS ADOPTED. Since the program of carefully conducted foremen conferences was introduced, there have been minor changes and improvements in every department in the mill. Too numerous to cite completely, a few of the suggestions which have been translated into practice follow:

1. Our first major change was in the bleaching processes, which change cut both time in process and cost materially, while improving the product.
2. Our second major change was the re-arrangement and new lighting of the knitting room, which reduced cost and improved both quality and quantity.
3. Our third major change was putting the second-floor sewing room on a progressive bundle system, at the present time 80% complete.
4. Our fourth major change was the progressive bundle installation on two items in two different departments on the third floor.
5. Our fifth major change was in the boiler room, where we changed over the fuel for the summer from coal to gas, with a yearly saving of approximately $1250 on fuel based on normal prices. The change will represent a saving for the 1944 season, because of higher prices, of approximately $1500.
6. Our sixth major change was the improvement in layout and materials-handling in the shipping room, with a substantial saving in labor.
7. Our seventh major change was the layout of the cutting room for improvement in handling and reduction of cost. This project is on the planning board now.

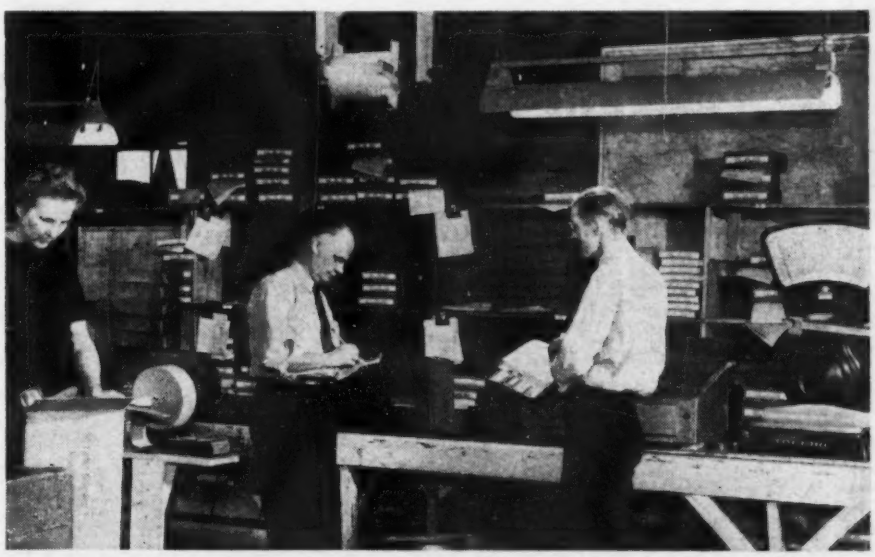
The bi-weekly conferences, affording each supervisor in his turn the opportunity of being heard, thus satisfied the major requirement which the management had been seeking. But still something was lacking, some means whereby supervisory-management relations could be further cemented. The answer to that problem was found in supplementing these bi-weekly problem meetings with quarterly "forum" gatherings.

QUARTERLY DINNERS. Dinner meetings are now held in the banquet room of a Minneapolis loop hotel once every quarter, and are attended by all supervisors and members of executive management. The latter members include Arthur B. Shaft, executive vice-president and general manager; Thomas E. Kendall, sales vice-president; and Walter H. Thorp, treasurer. E. L. Thomas, as in the bi-weekly meetings, gets the forum under way by introducing the three executives who speak briefly on each phase of the business: Mr. Shaft speaks on general policies and long-range planning; Mr. Kendall, on sales; Mr. Thorp, on financial matters. They hold back nothing that might serve to give supervisors a true picture of the company status. This frank treatment of the problems faced by management has contributed immeasurably toward creating interest in progress over and above that of the individual. Supervisors feel that they are at last part of management's plans.

In turn, Mr. Thomas reports in full on the progress made in the meetings of the previous quarter's bi-weekly conferences—every suggestion is reviewed, its merits explained, its author commended.

By far, the most important result derived from the foremen conference program is the feeling of mutual confidence that has sprung up between supervisors and management. Supervisors of MKW are now looking forward rather than backward. Their plans today include estimates of the future instead of reminiscences of the "good old days."

Most of all they have discovered that every supervisor contributes to the growth of the company, as surely as does every officer of the organization. It is for this reason that an assured management looks confidently to a postwar era in which the company will continue to change and grow through an improved program of supervisory-management relations.



Through the holding of regular foremen conferences, every department has undergone minor changes. Photograph shows materials handling in the shipping room which has been improved as a result of foremen suggestions.

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55 MADISON AVENUE • NEW YORK

AUTOMATIC QUILLER
Has Individual Winding Units

HIGHLIGHTS: Spindles on Abbott Winder Travel Around Machine — Speed Should Be 20 to 25 Heads per Minute—Rack Controls Package Diameter — Hopper and Mechanism Supply Empty Bobbins — Operator Touches Neither Empty nor Full Bobbins in Running the Machine.

This is the second of several articles describing the types of automatic filling winders produced in the United States. The first article appeared in the August, 1944, issue of TEXTILE WORLD. It is quite evident that automatic filling winding is destined to be an important factor in the production of woven cloth. The purpose of this series is to anticipate many of the questions that will arise.

THE ABBOTT AUTOMATIC QUILLER is designed to wind all types of yarn, both continuous filament and various kinds of spun fibers, such as cotton, cut synthetic fibers, woolen, worsted, etc., both in the single and in the ply. The size of the filling bobbin is, of course, determined by the shuttle; and the winder is so designed that a very accurately sized bobbin can be made with parallel sides and of uniform diameter. A uniform tension can be obtained, so that the bobbins are quite dense and 30% or more yarn can be put on, as compared with filling bobbins spun directly on spinning frames. There is an especially developed wind which overlaps every alternate layer with long and short strokes. This wind results in a better weaving bobbin than is usually obtained from direct spinning. It is possible, for example, on filament yarns to use a much lighter tension and still have an excellent weaving bobbin. As a result, the looms run better and cloth quality should be improved. While the automatic features of the Abbott quiller are quite important, the better weaving qualities of the bobbin are one of its chief advantages.

The Abbott automatic quiller is quite different from the stationary-spindle type. The winding units are driven by individual motors and have no automatic features in themselves. They are moved around the machine at various rates of speed from 10 to 35 heads per minute by being attached to a sprocket chain. One automatic head serves all the spindles on the machine. As the traveling spindles pass through this automatic head, the full bobbins are doffed and empty bobbins set in automatically. Instead of having small individual magazines for each winding unit, there is one large supply hopper for empty bobbins which are sorted and fed out automatically. Hence, the operator does not have to touch either the empty bobbins or the full ones. When running a number of lots, the full bobbins pass along a conveyor belt and are sorted by gates delivering them into separate boxes. The ar-

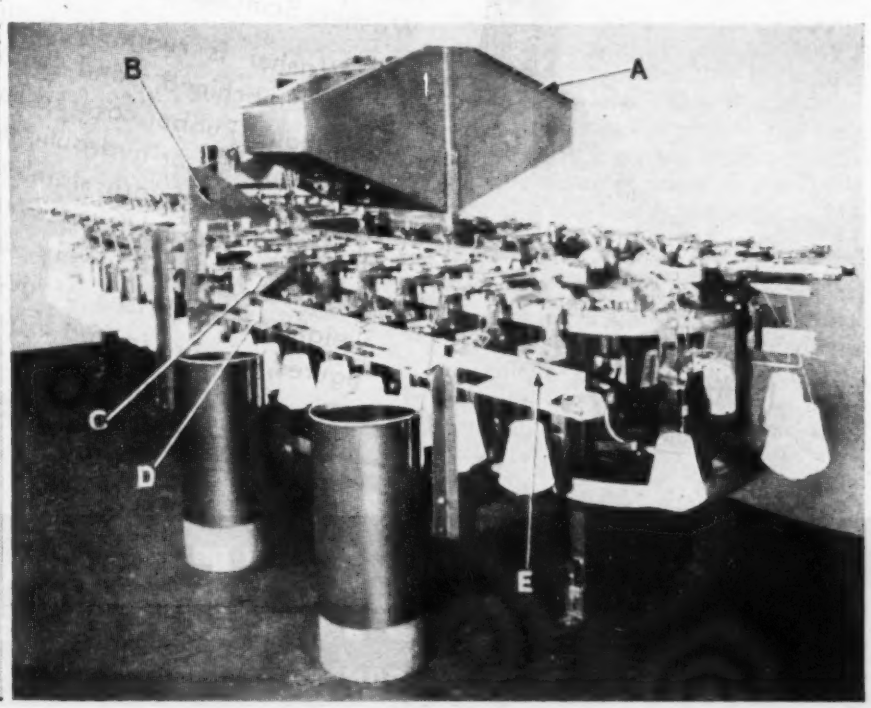
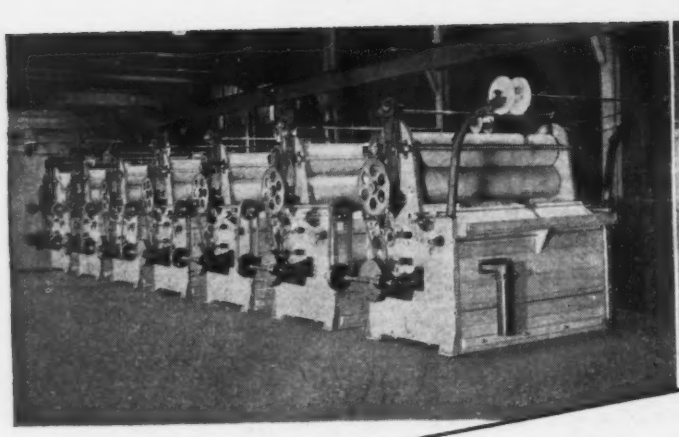
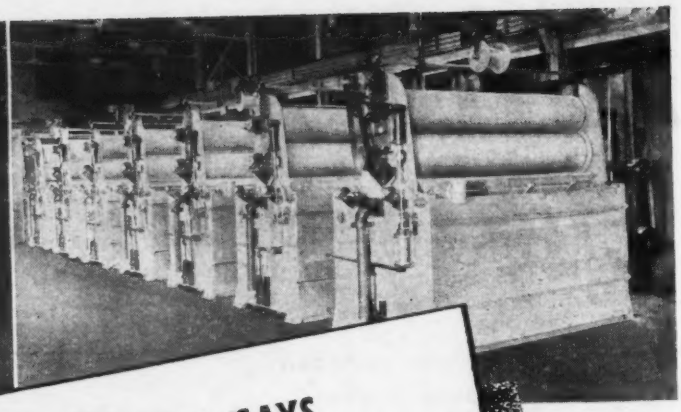


Fig. 1. In the middle of the machine is the large central supply hopper A into which empty bobbins are dumped en masse, and from which they are sorted and fed automatically to the doffing and doning mechanism B. Full bobbins slide out of the chute C onto a narrow conveyor belt D, from which they are rolled into cans or boxes by gates E.





THIS IS WHAT ONE USER SAYS ABOUT THE HUNTER CONTINUOUS WASHER:

". . . we are very much pleased with the results of its performance; results are much more uniform than we have ever had; we have had no trouble with it mechanically whatsoever, and it is very well constructed; have given this machine a fair test for the past four or five months, and do not have any criticism so far."

The new Hunter Continuous Washer will scour cloth clean, up to and in excess of 35 yards per minute. It affords continuous production between fulling and drying. Upon leaving the Washer, goods are picked up by a Scutcher and opened, then extracted through heavy Pneumatic Squeeze Rolls, and go directly to the Dryer.

It saves space. It has done the work of ten Dolly Washers in about half the floor space, and requires less than one-third the horse power. Four men can run the Washer, Scutcher, Squeeze Rolls and Dryer.

The Washer is ruggedly built with heavy cast iron frames, machined, and with anti-friction bearings throughout. Rubber covered squeeze rolls are equipped with pneumatic or hydraulic tension control. Whip roll, stop motion, etc., are stainless steel. Machine can be started or stopped from several different stages on the Washer. Machine is very versatile and will handle all weights and classes of goods. For actual operating figures, you are invited to write to Hunter today.

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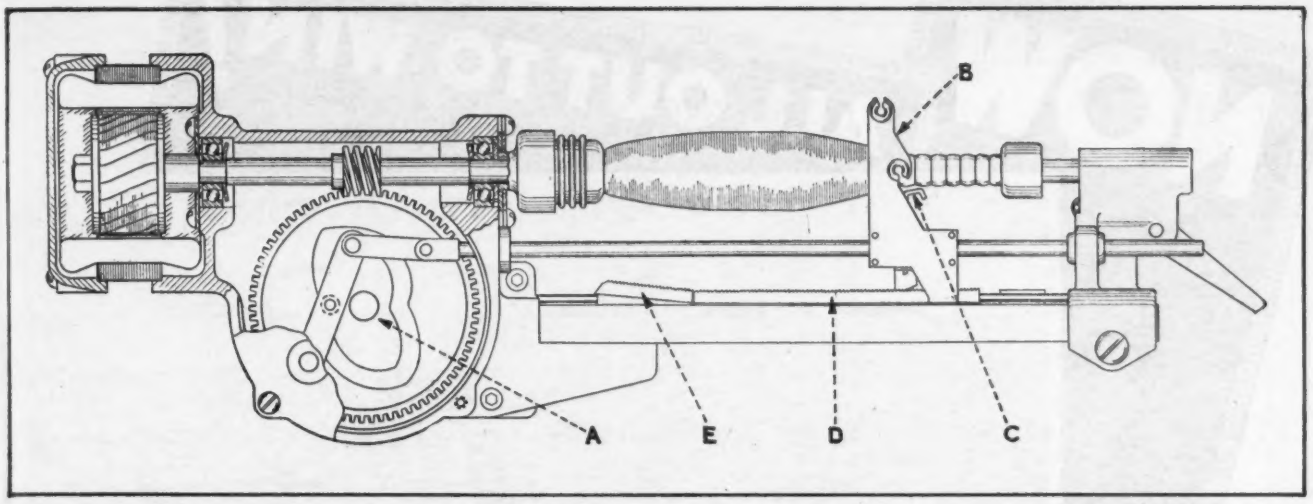


Fig. 2. In the winding units, the rotor of the 3-phase, 2-pole induction motor is mounted on the same shaft as the worm, as can be seen in this drawing. The traverse mechanism A is quite evident. It reciprocates the traverse rod which drives the traverse guide B by friction. A feeler foot C is pressed tightly against the bobbin by a spring. If this feeler is pressed far enough by the increasing diameter of the bobbin, it will cause a point of the feeler to engage the rack D, and thus move the slider assembly forward along the bobbin. The rack is set to give parallel sides on the bobbin as well as to control the diameter. The short rack E is set to control the formation of the base.

rangement for this can be seen in Fig. 1.

The gates are regulated so that bobbins from any group of spindles can be delivered automatically to any particular can. After the spindles have wound a small amount of yarn, they engage a cutter which cuts the inside thread off so there will be no loose tails. When a full bobbin is dropped out of the centers, it is rolled along the plate and the thread guide is moved back to starting position automatically at the same time. A spiral is wound back over the bobbin before the bobbin is cut away. The bunch is controlled at the automatic head. There is only one bunch-setting mechanism for all the heads, which results in bunches of very uniform length. Various shapes and types of bunches can be wound of almost any desired conformation.

The driving of each winding unit is done by a small 45-volt, 3-phase motor. The starting and stopping of the spindles are accomplished by a switch controlling this motor. It operates automatically as the winding unit passes the automatic head position.

Filling bobbins range from 8 to 15 per pound of net yarn. The average bobbin runs 9 to 10 per pound. The quiller should have the right number of spindles so heads can be moved around the machine at the rate of 20 to 25 per minute and so that the bobbins fill up in one circuit. Spindle speeds for most coarse and medium yarns are 3,500 r.p.m., this being the speed of a 2-pole, 3-phase motor at 60 cycles. Higher speeds on finer yarns, such as filament, can be obtained by a cycle changer which permits spindle speeds up to 5,000 r.p.m.

It is interesting to note that the winding speed on a filling bobbin varies considerably. For example, a large-diameter bobbin will have a higher average winding speed than a smaller one. Also, about one-third of the time consumed to wind the bobbin is during the formation of the base, which is at a relatively small diameter compared to the main part of the bobbin. Hence, a longer bobbin will have less percentage of base-winding time and a longer time winding the full diameter of the bobbin, so that a higher average winding speed throughout the entire formation of the bobbin will be obtained.

When the bobbin is completely full, there is an automatic knock-off which operates the switch to stop the motor driving the spindle. There is also a detector which stops the winding if the thread should break. When the full bobbin is dropped out of the centers, the traverse guide is merely plowed back to starting position, the friction being light enough to do this and yet strong enough to cause the traverse guide to be reciprocated by the rod.

LABOR REQUIRED. The labor required to operate this particular quiller is divided into the following:

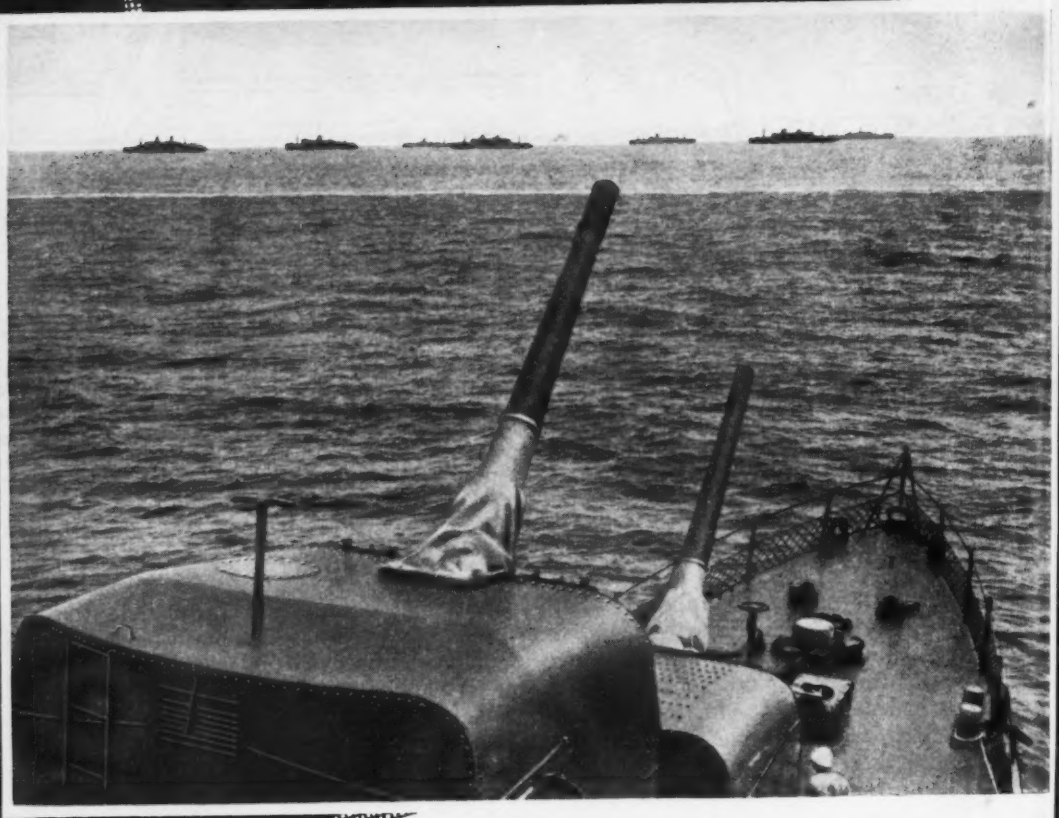
1. The bobbins are poured into the central supply hopper from cans; or on a large installation of quillers, an overhead conveyor is used which then takes its supply of empty bobbins directly from the bobbin-stripping machine. Gates are provided to divert the bobbins into whatever quiller requires filling. The usual practice in filling the hopper is to have this done by the floor-hand who must come to the quiller to take away supplies of full bobbins.

2. New supply packages are set in as required by the operator, who works just in front of the automatic head. The average cone or cheese holds 4 lb. or more; and, as the quills run about ten to a pound, there are approximately 40 bobbins wound for every supply package. Since the quiller produces 1,000 to 1,500 bobbins an hour or 100 to 150 lb. an hour, this only requires the setting in of 25 to 50 supply packages an hour. An operator generally runs two automatic quillers, so that this part of the work load is to set in 50 to 100 supply packages an hour. This is considered an easy workload compared to setting in cones in a magazine warper creel or on similar operations in which one operator will usually average 250 supply packages an hour.

3. The traveling units are cleaned by passing in front of an air jet and fans at various points around the machine. There is little cleaning to do, although this should be done periodically depending on the character of the work.

4. The other labor involved is tying up any ends which break. This is usually quite a small item, because the yarn normally has already been wound, with weak places and slubs taken out. Only an occasional break, therefore, has to be repaired.

NOW ALL OUT TO WIN!



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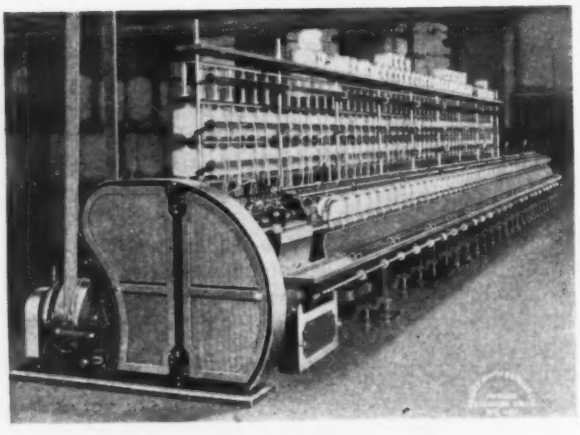

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Cotton Spinners Should Know Bases for DRAFT CONSTANTS

HIGHLIGHTS: Some Old Frames Have Draft Gear at Back or Middle Roll and Require Inverse Constant—Crown Gear Occasionally Changed on Modern Frames.

BY MARCUS GROSS AND F. H. GUNTHER

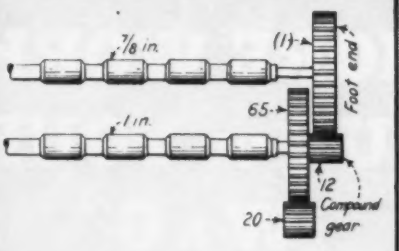


Diagram of gears for frames requiring compound gear and inverse constant. In modern frames the 12-tooth gear would in effect be the change gear; and the 65-tooth gear, the crown gear.

THE AVERAGE SUPERVISOR knows his draft constants but often neglects to study the gear trains from which they are figured. This neglect can be due to pressure of other duties, lack of technical knowledge, or just plain forgetfulness. For these reasons, an occasional brush-up on the gearing by the supervisor not only refreshes his memory, but adds to his store of knowledge on drafting.

DRAFT CONSTANT. The draft constant can be described as the numerical result of a substitution of unity or 1 for the number of teeth in the draft gear in a mathematical expression of the gears and roll diameters in a drafting assembly. This makes the constant a hypothetical draft; i. e., a constant of 320 is a hypothetical draft of 320 using a figurative one-tooth gear. When the actual draft gear is inserted to complete the train of gears, the hypothetical draft is no longer a constant, but is now an expression of draft for the gear substituted. Draft constants are established by tracing the train of gears from the back roll to the front roll and by including the diameters of those rolls in the mathematical expression if the diameters are not the same.

Certain older types of spinning frame have what is known as an "inverse constant," wherein the change gear may also be the back-roll gear or the middle-roll gear, depending upon whether the break-draft gears are located at the head end or pulley end of the frame. Invariably, compound gears are used on these frames, and the gear train is traced from front to back to get the constant. The constant is multiplied, instead of divided, by the draft to get the draft gear. For example, assume in the accompanying diagram a 20-T front-roll gear, a compound gear of 65/12, a $\frac{7}{8}$-in. back roll, and a 1-in. front roll. The calculations for the inverse constant traced from front to back roll would be:

$$\frac{20 \times 12 \times 7}{65 \times (1) \times 8} = 3.23.$$

The 20-T gear is meshed with the 65-T gear of the compound, the 12-T gear of the compound is meshed with the figurative one-tooth gear (back-roll change gear), and the diameter of the back roll is divided by the diameter of the front roll to complete the constant.

FINDING DRAFT GEAR. If a draft of 16 is desired, then the constant 3.23 x 16 = draft gear,—in this case, 51.68, or a 52-T draft gear or back-roll gear. Once the draft gear is inserted in place, the constant ceases to exist, as the chain of gears is complete. Tracing from back-roll gear to front-roll gear proves that the draft or back-roll gear inserted will give the draft desired; viz: $\frac{(52) \times 65 \times 8}{12 \times 20 \times 7} = 16$ mechanical draft or draft desired.

It is interesting to note the reason why the diameters of the front roll and back roll are always included in the draft calculations when they are different. If all the gears in the draft train were the same and the front roll was of different diameter from the back roll, there would be a difference in the surface speed of the two rolls.

In the modern-type spinning frames, we figuratively turn the back-roll gear once and trace through the gearing to find the constant. Assume an 84-T back-roll gear, a 160-T crown gear, a 25-T front-roll gear, a diameter of back roll of $\frac{7}{8}$ in., and a diameter of front roll of 1 in. The calculations are: $\frac{84 \times 160 \times 8}{(1) \times 25 \times 7} = 614.4$ draft constant.

By turning the back-roll gear once, we have proved that the front roll revolves 614.4 times to one revolution of the back roll. This draft or ratio between the rolls is decreased when the regular draft change gear is inserted in the expression in place of 1.

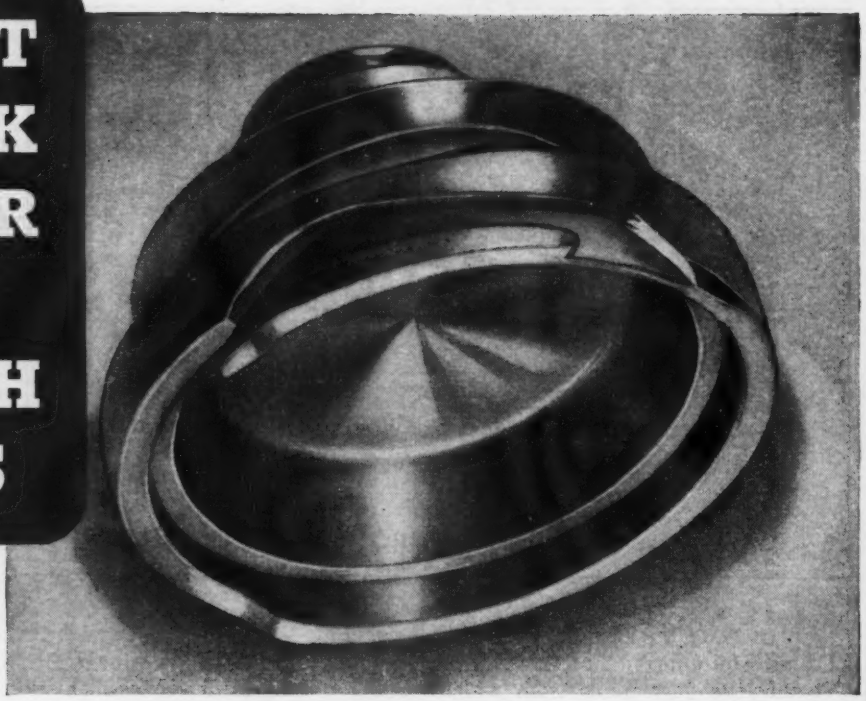
CROWN-GEAR CHANGES. It may be necessary at times to change the constant by changing the crown gear. A "major" draft constant can be devised which becomes standard for any particular chain of gears by taking the gear train for the draft constant of 614.4, inserting a hypothetical one-tooth gear in the place of the 160-T crown gear to get the major draft constant. The calculation now is the following: $\frac{84 \times (1) \times 8}{(1) \times 25 \times 7} = 3.84$ ("major" draft constant).

Multiply 3.84 by the 160-T crown gear, and the result will be the draft constant of 614.4. Multiply 3.84 by the number of teeth in any crown gear to get a draft constant.

COMPONENT DRAFTS. All drafts between any two rolls in any system of three or more rolls when multiplied together give the total draft of the system. Calculating these component drafts is comparatively easy once the draft gear train is determined. On a 2.00-hank roving, single end fed, to be drafted, if we have a break draft of ratio 28/25, or 1.12, and a main draft between the front and middle roll of 15.20, the total draft will be 1.12 x

(*Continued on page 210*)

YOU CAN GET MORE WORK OUT OF YOUR "W & G" LOCKSTITCH MACHINES



"THE HOOK"

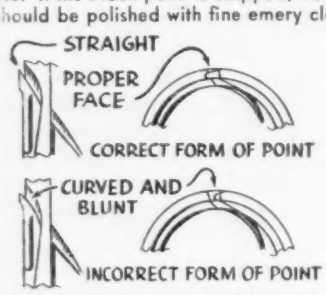
The Hook is second in importance only to the Bobbin Case in the "W & G" Lockstitch Machine. The Hook is constructed in such a manner that the Bobbin-Case functions on the "floating" principle thereby virtually eliminating friction between case and Hook. Thus, no lubrication is required which eliminates completely the marking of thread from blackened oil.

Perfect stitching depends to a large extent on the proper adjustment or "timing" of the Hook. It is essential, therefore, that instructions regarding this adjustment be strictly adhered to.

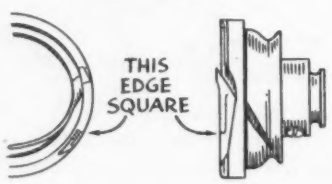
CHECK THESE POINTS

General: If the Hook is badly chipped or if Bobbin-Case Raceway is noticeably worn, it is best to replace the Hook with a new one.

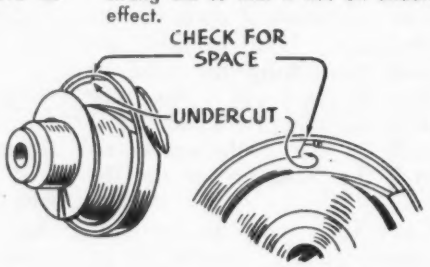
Hook Point: This is the most important feature of the Hook as its function is to take the needle thread loop at extremely high speed and spread the loop so that it will pass around the Bobbin-Case. If the Hook point is chipped, worn or blunt it should be polished with fine emery cloth.



Thread Detainer: This part is designed to control the release of the thread loop until loop is completely around Bobbin-Case. The Detainer should, therefore, be approximately square to hold the loop, but should have no rough edges.



Notch Under Guard Ring: This seemingly inconspicuous indentation in the Hook is very important as the thread is pulled directly against it as the loop is taken. When necessary it should be strung out so that it has an undercut effect.



To attain highest efficiency with your Machines get the new "W & G" Lockstitch Manual. It's free to users of "W & G" Lockstitch Machines. Send for a copy on your company letterhead.

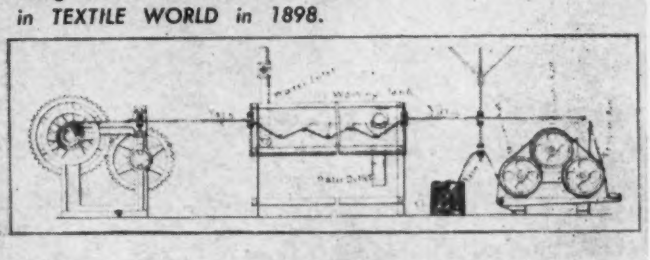
WILLCOX & GIBBS SEWING MACHINE CO.
214 West 39th Street, New York 18, N. Y.

MERCERIZING

This modern warp-mercerizing machine shows how Mercer's idea of a century ago has developed into an exacting textile process.

An Idea Which Became an Industry

Below: This early yarn-mercerizing machine was shown in TEXTILE WORLD in 1898.



HIGHLIGHTS: England Celebrates Centennial This Year — Chemical and Physical Actions Still Being Studied—Uniformity is a Problem—Many Types of Machines Used—Basic Principles Remain Unchanged.

By R. LINDENMAIER
Sandoz Chemical Works, Inc.
New York, N. Y.

THE CENTENNIAL of John Mercer's work in connection with our present mercerizing process is celebrated in England this year.

Records are available which show that he had made experiments in 1844 (which led to his patent taken out in 1850) dealing with the effect of caustic soda upon cotton. Mercer was especially interested in the shrinkage obtained and in the increased affinity for dyestuffs. In fact, for some time Mercer believed that by treating cotton with caustic soda, he could imitate the fulling process carried out on woolen piece goods. In addition to the above two vital points, Mercer was also concerned with the increase in tensile strength and absorbency. Mercer himself did not go so far as the production of luster. This was worked out around 1889 by another English textile man, Horace Lowe.

Picking up the work where Mercer had left off, Lowe found that by treating cotton with caustic soda under tension, a lustrous fiber was obtained. This led to the first patent application, and subsequently to the commercial exploitation of the mercerizing process.

In this summary, an endeavor is being made to give only a brief description of the chemical and the physical changes that take place; the main emphasis is put on the practical angle of the mercerizing process as it has to be carried out on skeins, warps, and piece goods.

SKEIN YARN TREATED. It is most likely that the first commercial mercerization was carried out on skeins. One of the very first large-scale merchandising propositions of mercerized goods were the DMC embroidery yarns. A very fine promotion business was built up for pearl yarns and other hand-embroidery yarns possessing an extremely high luster. The exact method by which these yarns were mercerized has never been made public.

It is quite possible that these pearl yarns were mercerized twice, or perhaps even three times. Theoretically, there should be no difference between yarn that has been mercerized to its maximum capacity in one process and yarn which has undergone several such operations.

On the other hand, especially some 30 or 40 years ago, it is quite possible that the machines were such that one

A Recent Installation of Four SARGENT STOCK DRYERS
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Why not let SARGENT solve your Drying troubles?

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Graniteville, Massachusetts, U.S.A.

could not produce the maximum result in one operation. By mercerizing these yarns several times with increased tension each time, it is feasible that improved results were obtained over goods mercerized only once.

CHEMICAL CHANGES. The fact that cotton treated with caustic soda possesses a greater affinity for dyestuffs leads to the thought that the structure of the cotton has undergone a change. Furthermore, Mercer noticed that part of the caustic soda was absorbed by the cotton (or any other vegetable fiber, for that matter). He found that caustic soda of 60° Tw. has to be used for feeding in order to keep a constant strength of 45° Tw. in a bath through which cotton is passed continuously.

It has also been established that increasing amounts of caustic soda are absorbed by the fiber by increasing the strength of the NaOH solution. The question as to whether a new chemical compound is formed has been under discussion for many years. Work by the means of X-ray examinations has helped greatly to arrive with reasonable assurance at the conclusion that a sodium-cellulose compound is actually formed.

Due to the fact that the rate of absorption takes place in two decided steps (see curve Fig. 1), the following two distinct Na-cellulose compounds can be observed:

$C_{12}H_{20}O_{10}$. NaOH and

$C_6H_{10}O_5$. NaOH.

The fact that the absorption takes place in these stages at an accentuated rate with leveling off in between has lead to the following practice in actual production work. Mercerizers who are primarily interested in the increased dye affinity use caustic soda of 30° Tw. Mercerizers who are interested in producing maximum luster work with caustic soda at 50° Tw.

PHYSICAL CHANGES. Perhaps a rough illustration of the appearance of the cotton fiber under the microscope both before and after mercerizing, can most clearly illustrate the physical changes. (See Fig. 2.) As is shown, the natural cotton fiber is rather twisted, bent, and flat. Therefore, it does not offer a good surface for light reflection. On the other hand, due to the application of tension on a cotton thread saturated with caustic soda, the individual fibers arrange themselves horizontally; they become straight and round. Therefore, they possess an excellent surface for light reflection.

TENSILE STRENGTH. It has become a generally accepted fact that mercerizing increases tensile strength. It is a very complicated matter, however, to get accurate figures on this question. Many factors enter into it, rendering it extremely difficult to establish comparative values. There is no doubt, that if we simply treat cotton with caustic soda and allow the fiber to shrink, this treated fiber will subsequently stand a much higher load before breaking. On the other hand, if we completely mercerize yarns or piece goods, it is much more difficult to determine the actual increase in strength we have obtained, if any. If we overstretch during mercerizing, we may possibly have a loss in strength. If we keep the tension to gray length, we will probably have a slight increase. The twist of the yarns, the count, and the construction of the goods all have a bearing on the final comparison. It is probably correct to state that by carrying out a normal mercerizing process, with due precautions, an increase in strength of 2 to 4% takes place.

As mentioned before, in order to obtain accurate and complete information on this subject, a very extensive study has to be carried out. It is known that results will vary according to the quality of cotton, difference in the twist, and degree of tension during mercerizing.

SKEIN MERCERIZERS. One of the oldest-type mercerizing machines is based on the principle of revolving a pair of rollers onto which a skein, weighing 4 lb. can be placed. The rollers are adjusted in such a way that the skein is stretched to gray length, and the rollers then move to the next position. Here the skein is sprayed for two minutes with a caustic soda solution. The rollers move to the next position, where the skein is sprayed with hot water, also approximately for 2 min. Then the next two positions are used for spraying cold water. After the last position, the rollers have described a complete circle and arrive again at the starting point. The operator removes the skein, places the next skein on the machine, and the process starts anew. With loading and unloading, it takes 10 min. for one skein. Therefore, the machine produces 24 lb. in one hour or 192 lb. in an 8-hr. working day.

Such a machine was still operating in Scotland in 1932 for the mercerizing of cotton yarns which were subsequently employed for the manufacture of high-grade shoe laces.

In England, the largest percentage of yarn mercerizing is done in skein form. Very few warp mercerizers are in operation. Most probably, this is due to the fact that the English production is less standardized than production of the United States. There are more individual lots of one certain count, or one certain weight, or one certain quality; and it would cause too many changes and adjustments on the

(*Continued on page 218*)

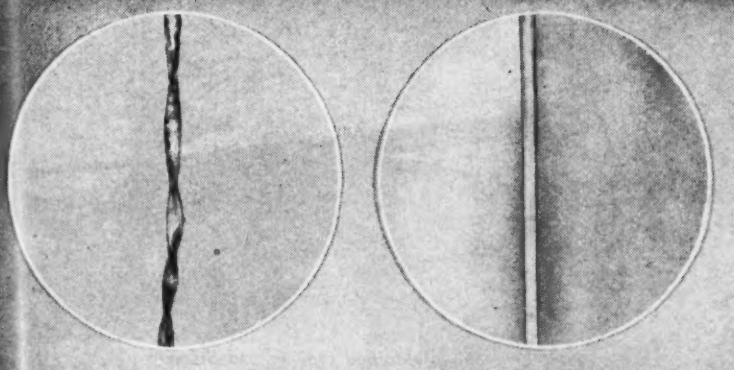


Fig. 2. Photomicrographs show effect of mercerizing on cotton fiber.

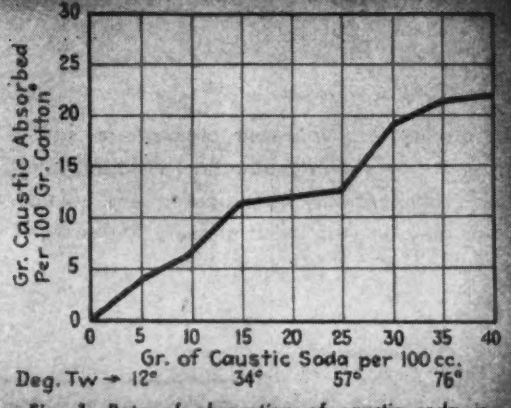


Fig. 1. Rate of absorption of caustic soda is shown here to depend upon the strength of the solution in the mercerizing bath.

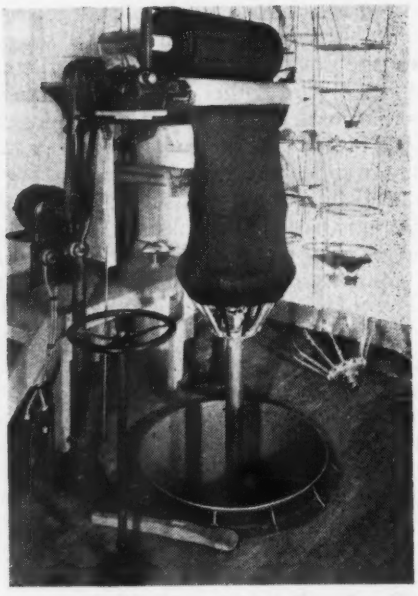
Textile Manufacturers, Here's News for You!

NEW SHIELDS METHOD

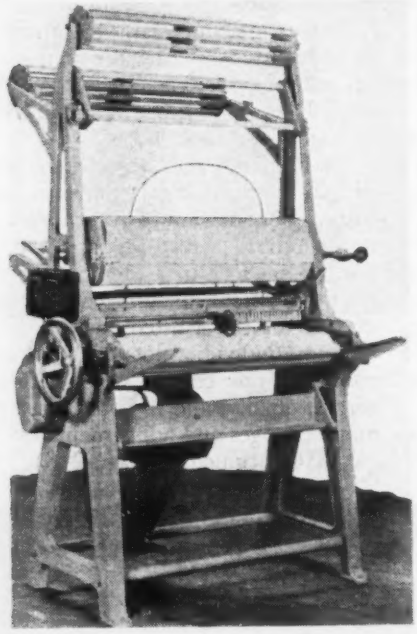
for CONTROLLING SHRINKAGE to less than 2% in either Direction on TRICOT and Other Flat Knits

By this new system, the edges of flat knit fabrics are sewed together to form a tube, and while yet wet, are spread, as shown at the upper right.

After being dried in the usual manner, the second Shields Method machine, shown at the left, steams, spreads and rolls the fabric very evenly, at a pre-determined, controlled width.



Shields Method Wet Spreader

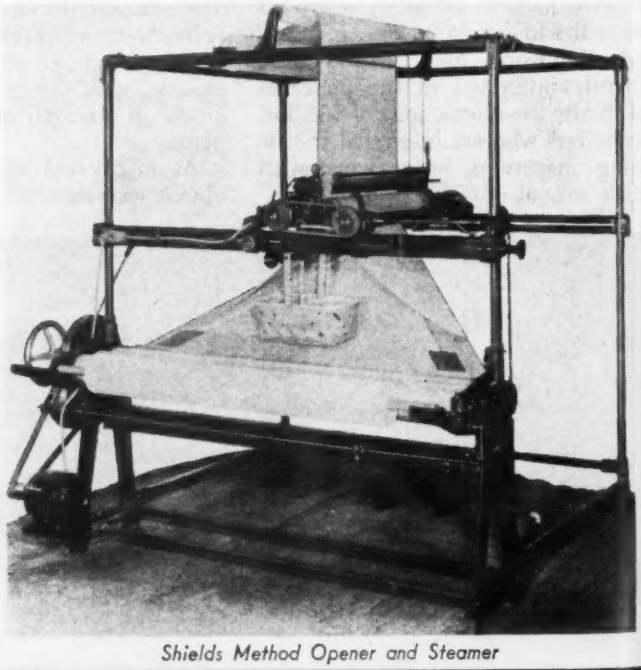


Shields Method Steamer and Spreader

Finally, as illustrated at the lower right, the third Shields Method machine cuts the sewed edge, opens the fabrics, removes the crease by steaming and rolls the single-thickness fabric into full, even-width rolls.

Such is a typical Shields Method of solving problems within any particular branch of the textile industry.

Let us discuss with you your problems or ideas for present or post-war production. Modernizing your present plant may be indicated, and Shields Methods may be your exact answer. No obligation involved.



Shields Method Opener and Steamer

Shields MODERNIZING Method

GRAND RAPIDS TEXTILE MACHINERY CO.

1407 DIVISION AVENUE S., GRAND RAPIDS 2, MICHIGAN, U. S. A.

OVERHEAD CONVEYOR at Talbot Mills

HIGHLIGHTS: System Covers Every Room in This Woolen Mill—Jack Spools, Cloth Rolls, Bobbin Boxes, and Waste Material Handled.

By HAROLD E. REED
Assistant Editor, TEXTILE WORLD

INSTALLATION of an overhead chain conveyor at Talbot Mills, North Billerica, Mass., has resulted in the saving of valuable floor space by putting the ceilings to work. A constant flow of materials is assured to all rooms of the mill, and the work formerly performed by 12 employees is now handled by the conveyor system. Aside from these features, the conveyor system itself acts as an efficient storage space for materials in process when the mill is not operating. As far as is known, this represents the only overhead chain conveyor system installed in a woolen mill.

This conveyor, engineered and installed by Lampson Corp., Syracuse, N. Y., is entirely overhead, being supported from the ceilings. A link-type chain conveyor about 1,500 ft. in length is supported at frequent intervals by metal roll trolleys that operate on a supported overhead I-beam track. This track forms a closed circuit, starting on the top floor of the mill and running through each room on each floor and back again to the top.

CONVEYOR MECHANISM. The overhead conveyor is driven by a single 7½-hp. electric motor located on the top floor of the mill. Drive is through a Reeves variable-speed drive and a 2-to-1 reduction gear. Normal speed is 25 ft. per min., although it is possible, using the variable-speed drive, to obtain a speed of about 50 ft. per min.

A safety mechanism is incorporated in the drive which stops the motor if the conveyor should jam or become stuck.

The Lampson chain conveyor at Talbot normally carries cars at about 10-ft. intervals. Three different types of cars are used; viz., roving cars, cloth cars, and filling-box cars.

Roving cars vary in size to permit the handling of three different sizes of jack spools. Each car holds six jack spools and rests on rollers so it may be pushed about when the roving car is disconnected from the conveyor chain.

Cloth cars are simply trays which are slung from the conveyor chain and are not removable. Rolls of cloth are placed on the trays and removed when they have reached their destination.

Filling-box cars are similar to the cloth cars in that they are not removable. These cars, however, have a flat bottom with a slightly raised side running all the way around. Boxes of bobbins, and even yarn waste, are piled in this car for transportation to some other point in the plant.

ROUTING OF MATERIALS. The top or fifth floor of the mill is devoted to mule spinning and receives jack spools via the conveyor system. Doffed bobbins are placed in the filling car and carried to the winding room. As the conveyor travels through every room in the mill, supplies destined for each room are removed as they pass and materials intended for other rooms added.

The fourth floor is devoted to both mule and ring spinning, whereas the third floor handles ring spinning only. The second floor is the cloth room, and from there the system travels to the fourth floor of an adjacent building which is used for carding. Then it passes to the third and the second floors, which are given up to weaving. The picker house is on the second floor; and after traveling through this section of the mill, the conveyor returns to the fifth floor.

Passage of the overhead chain conveyor through all of these floors of the mill permits all processed materials to be routed to the next process without extensive handling. This system has eliminated the necessity of having five elevator operators and about seven laborers to push trucks from one room to another.

SAFETY FEATURES. Stop-and-start switches are located on every floor for

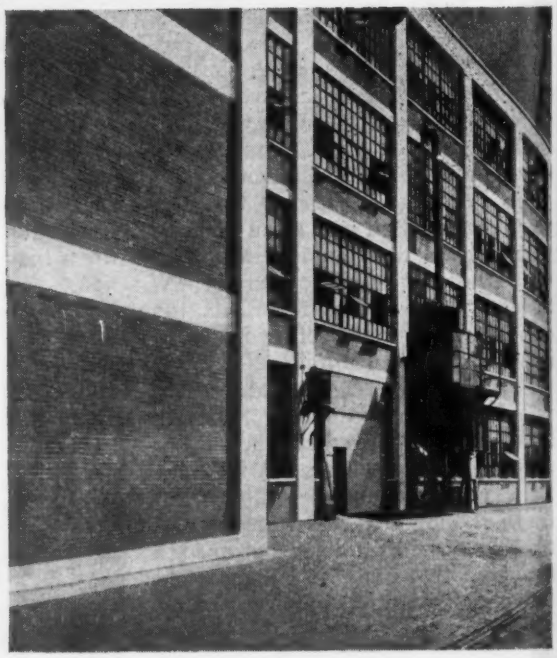
Method of passing conveyor from one floor to the other through a floor opening. Flexibility of the system is apparent by the reversal of direction of the conveyor. Yarn-waste is being transported.

WATERFOIL

THE UNIQUE TREATMENT FOR EXTERIOR MASONRY SURFACES

before

after



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A. C. Horn Company *Established 1897*

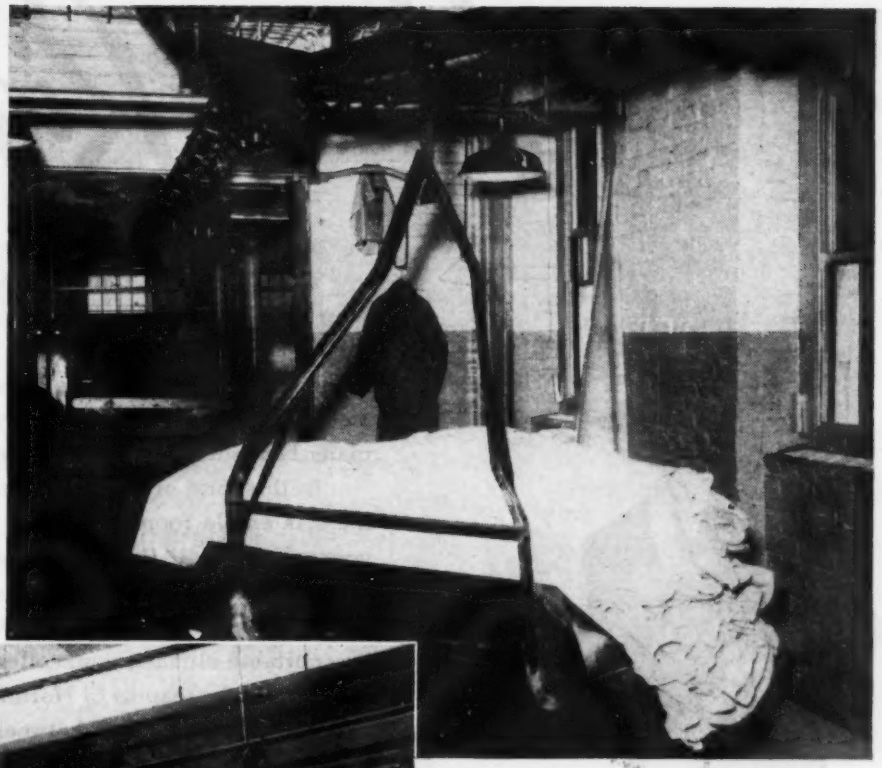
Manufacturers of Materials for Building Construction and Maintenance
Factories: Long Island City 1, N. Y., Houston, Texas; San Francisco, Cal.; Branch Offices in Principal Cities

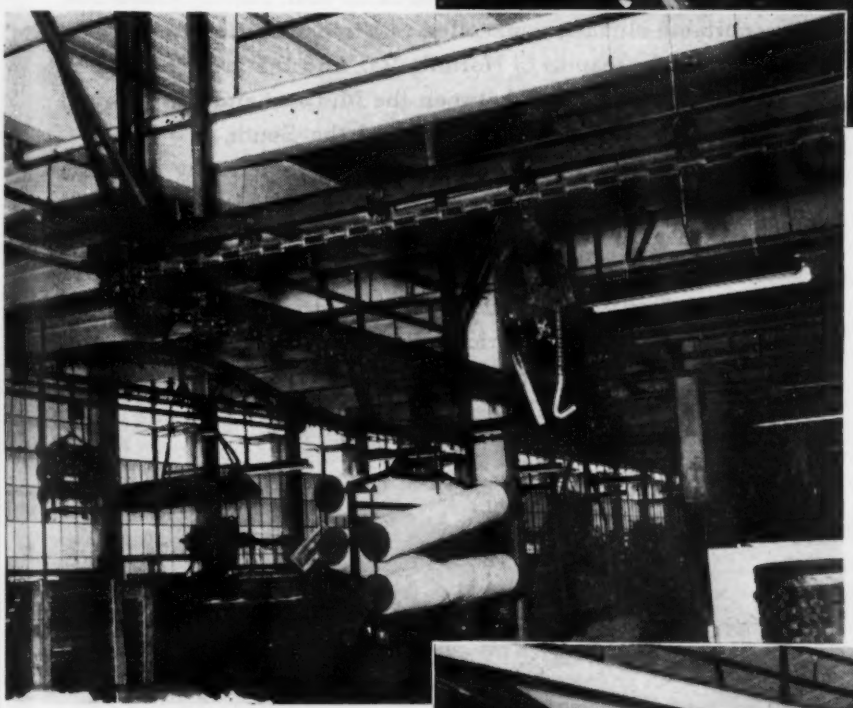
controlling the conveyor. It is possible to stop the conveyor from any floor in the mill and lock the switch so the conveyor cannot be started from any other switch.

Talbot engineers are now installing a central indicator board at the boss spinner's desk on the fourth floor in an effort to provide more efficient operation of the system. Formerly the system might be stopped and the switch locked on one of the floors; the person stopping the system might forget to turn it on. As a result, the system was, on occasions, stopped for several hours and each switch in the mill had to be inspected. Now, when a switch is locked, it will be indicated on the control board. When a long delay occurs, it is a simple matter to locate the offending switch on the control board and telephone to that section of the mill.

Conveyor elevators are not used in this system. Lampson engineers devised methods of passing the conveyor from one floor to another through floor openings protected by fire doors.

Each metal-covered fire door is set on spring hinges and held open by a metal chain having a 185° F. safety fuse. In case of fire the fuse would melt and allow the door to swing close. However, if a car happened to be passing through the doorway at that moment, the door would not close fully until the car had passed out of the way. On final closing, the door trips a switch which stops the motor driving the conveyor.

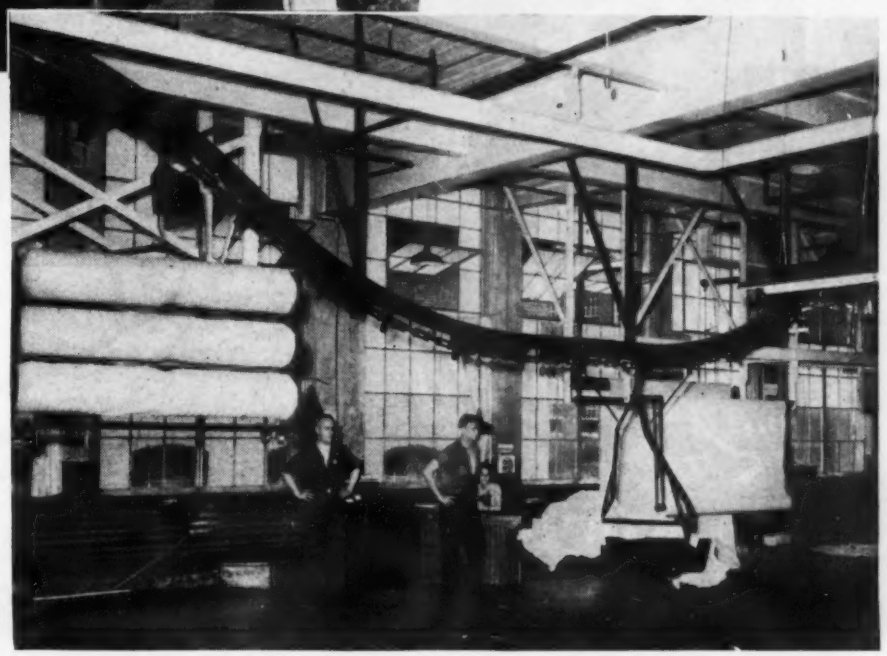




A typical cloth tray for handling cloth in rolls or in piles. While trays, or carriers, are ordinarily attached at about 10-ft. intervals, the conveyor is so constructed that distances may vary.

Three different sizes of jack spools are handled on two different sizes of carriages. When extremely long jack spools are used, they are placed in carriage shown in center of this picture. Carriage at left is conveying short empty jack spools. In the foreground is unit for supporting jack spool carriage.

Versatility of overhead conveyor is illustrated by track dipping to permit loading and unloading of cloth trays in cloth room. *All Photos Courtesy of Lampson Corp.*

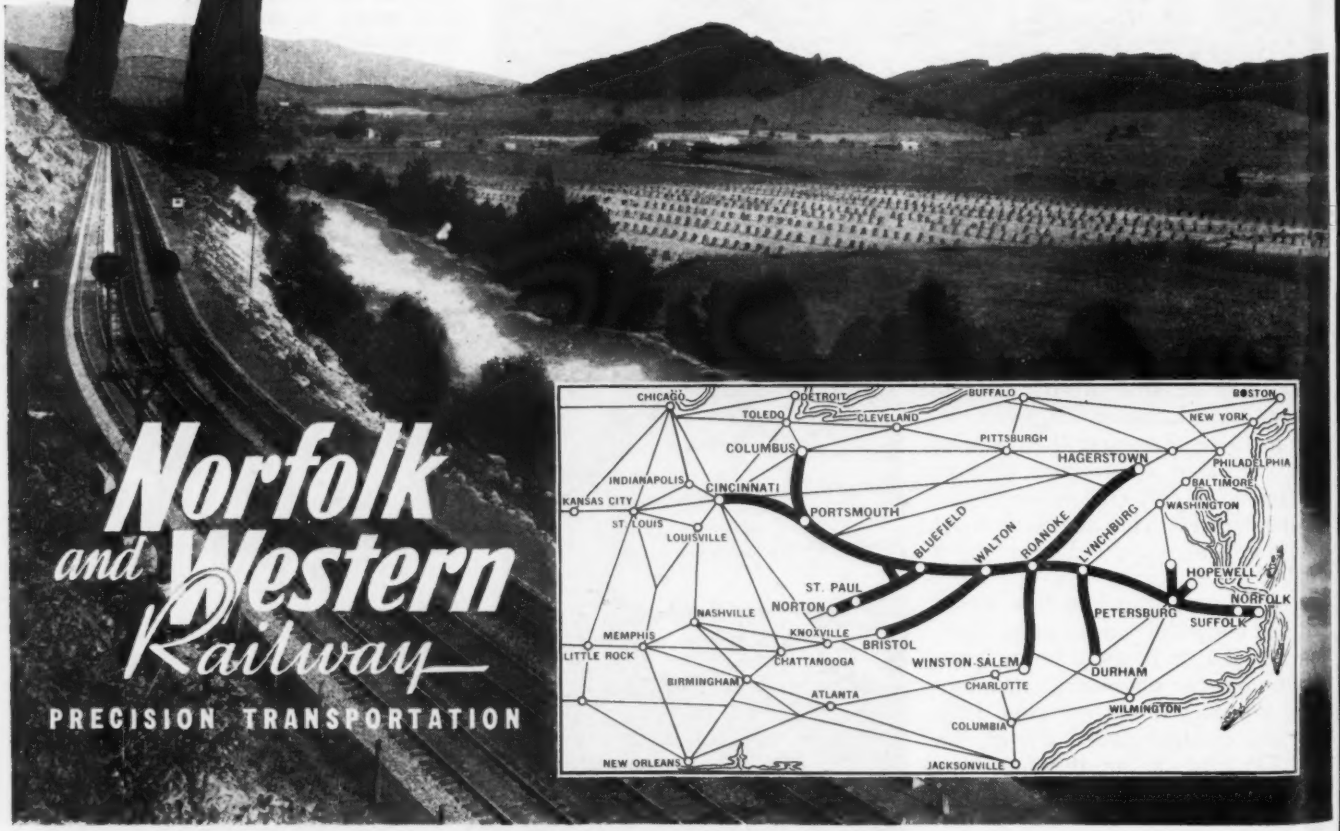


Come Right in!

Thinking about the future — after this war is over — planning to locate or re-locate a textile plant? Then, come right in, to the territory served by the Norfolk and Western. Let the specialists of the railway's Industrial and Agricultural Department go over this area with you . . . and discuss with you plans best suited to your postwar activities.

In this land of broad valleys, many rivers and deep forests, there is ample room to operate efficiently and to grow. Here, you will find all the essentials necessary to sound industrial progress: a wealth of basic raw materials; intelligent native labor and an abundance of power from coal, readily accessible; an equitable climate, unexcelled rail transportation to the year-round, ice-free seaport of Norfolk, Va., and the great producing and consuming markets between the Midwest and Virginia and Carolinas and between the North and the South.

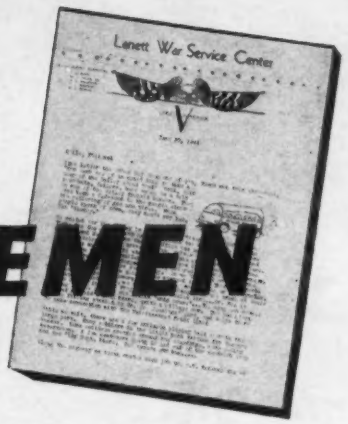
The doors to the Norfolk and Western territory are wide open. Come right in. The railway's industrial specialists are anxious to help you — will gladly present complete, accurate, detailed information about the territory served by the N. & W., and the advantages it offers for industrial growth. Call or write Industrial and Agricultural Department, Norfolk and Western Railway, Roanoke, Va. All requests for data are held in strictest confidence.



Norfolk and Western Railway

PRECISION TRANSPORTATION

138,488 LETTERS To SERVICEMEN



By **FLOYD TILLERY**
West Point, Ga.

HIGHLIGHTS: West Point Mfg. Co.'s Mill Group Operates Five War Service Centers in Towns in "The Valley"—Secretaries Keep in Constant Touch with Servicemen—Home Towns' War Record Stimulating to Men Overseas

IF LETTERS are the best morale-builders for servicemen, the 3,000 soldiers and sailors who have gone out from the textile mills in "The Valley" should be in fine fettle, whether they are in the training camps or at the battle fronts. Within the last two years they have received 138,488 letters from their five War-Service-Center secretaries alone.

"Keep the letters coming!" these men write back every week. "They help more than you will ever know. And they always make us feel so proud of the Valley."

"The Valley" includes the six interlocked towns located on the banks of the Chattahoochee River: Lanett, Shawmut, Langdale, Fairfax, and Riverview in Alabama; and West Point in Georgia. The West Point Mfg. Co. operates cotton mills in each of the Alabama towns, employing about 10,000 men and women.

War Service Centers, patterned after those which were organized in World War I, are maintained by the company in each of the towns to serve as "liaisons" between the men in service and their communities. Full-time secretaries, young women, are employed to carry on the work of the centers. Letter-writing is the principal job of the secretaries.

The letters make these servicemen "proud of the Valley" because, among the many other items, they tell of the war-effort activities of the folks back home—

How the employees in the Valley mills are investing 25% of their earnings in bonds during every War Loan.

How each of the mills in the Valley is flying an Army-Navy "E" pennant with three white stars for "continued excellence in the production of war material."

How the Valley contributed $27,000 to the Red Cross War Fund when it was asked to raise only $15,000.

How the Red Cross women of the Valley always meet their quotas for surgical dressings.

In addition to the straight news of the Valley, the WSC secretaries fill their letters with chatty, cheery reports of all the little happenings in the home-town: athletic events, picnics, parties, dances, weddings, visits, even gossip. Occasionally a page of jokes is inserted. Periodically, lists of names and addresses of all the local men in the armed forces are included. These lists frequently bring together close friends, lost to one another in the large military outfits.

Every Valley soldier and sailor is also remembered on his birthday and on the festive days of the year with greeting cards. When a man in uniform is hospitalized, the secretaries pass the word around, giving the man's address, and soon he is receiving a flood of mail from the folks back home. In addition every former employee of the company is put on the mailing list of one of the local papers.

At Christmas-time the company sends to its service men through the secretaries a gift box containing such articles as razor blades, soap, toothbrushes, toothpaste, combs, needles, thread, buttons, candy, chewing gum, cigarettes, playing cards, comics, short stories, handkerchiefs, and small first-aid supplies.

Hundreds of replies come to the Centers every week from servicemen all over the Union and all over the world. Letters filled with thank-you's and please-keep-writing and interesting news from the training camps and battle zones.

A common comment in these letters from the men follows:

"The fellows here in my outfit read our letters and our newspapers, and say they wish their home-towns had service centers. They all believe us when we tell them that our Valley is the greatest place in all the world."

When a Valley serviceman is back on leave or furlough, he never omits a call at the local Center to say hello to his pal, the secretary; to see the pictures on the large displayboard; to read the newspaper clippings pertaining to him and to his home-town buddies; and perhaps to look at the souvenirs which have been sent back from the Southwest Pacific, India, China, Africa, Italy, and France.

The Centers are also popular meeting places for the parents, relatives and friends of the servicemen. Open-House is occasionally held so that the folks at home may get together and exchange news about their men in uniform. More than 20,000 visitors have called at the five Centers.

Following World War I, the West Point Mfg. Co., published a booklet entitled, "Defenders of Democracy," which contained the pictures and military records of every serviceman from the Valley. It also listed a summary of the activities of the War Service Centers of 1917–18. A similar booklet will be published at the end of World War II, and a copy presented to each of the returning heroes.

Secretaries shown in Lanett War Service Center reception room. Pictorial record in background.

Sirrine Textile Building

Clemson—

A Great Institution Built in the Lengthening Shadow of a Living Shrine

Here in neighborly intimacy with the unpretentious white colonial mansion of John C. Calhoun, Cabinet Officer, Vice-President and Statesman, Clemson College has grown through successive generations of men on whom fell his lengthening shadow.

First, Thomas C. Clemson, his son-in-law and heir, who bequeathed Fort Hill Place for use as a scientific and technical college which "will afford useful information to the farmers and mechanics" and furnish the youth of the State "the advantages of scientific culture."

Then, Joseph Emory Sirrine who extended the area of influence through adequate endowment and wise counsel.

Calhoun, Clemson, Sirrine—so runs the record on Fort Hill Place, and as the record runs, the shadow lengthens. From a purely local institution designed to serve local needs, Clemson has grown until today it enjoys national, even international recognition. Its Textile School is the largest, best equipped and certainly one of the most successful in the country. Daniel Construction Company is proud to have been associated with this engineering enterprise through the erection of this and other buildings on the Campus.

DC

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Industrial and Commercial Construction

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ELECTRONICS AT WORK IN TEXTILE MILLS

HIGHLIGHTS: Stepless Control of Motor Speed Practical—Smoke-Density Indicator Responsible for Better Boiler Combustion—Germicidal Lamps May Prevent Mildew—Many Other Applications.

By HAROLD E. REED
Assistant Editor, TEXTILE WORLD

Electronic tubes make possible stepless control of motor speeds. The two big tubes in the motor control box supply power to the armature of the motor, and the pair of smaller tubes energizes the field.

MOST TEXTILE MILL-MEN are constantly surrounded with electronic equipment, but are seldom aware of its presence. Mills which are equipped with automatic control and recording instruments, mills which have a stroboscope for checking spindles, mills which have interoffice communication systems, and even those equipped with fluorescent lighting are, technically, dependent on electronics.

VARIABLE-SPEED CONTROL. One of the interesting and practical applications for electronic controls in textile mills, and one which offers great possibilities, is for control of motor speed. Several different types of electronic adjustable-speed drives are available, providing speed ranges as great as 100 to 1, in some instances.

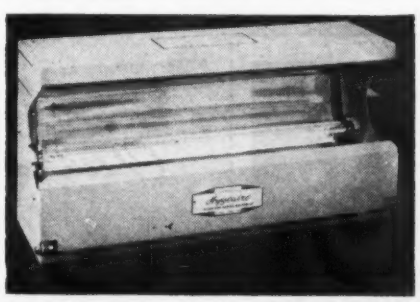
Control of motor speed is required frequently for efficient operation of tenter ranges, dryers, carbonizing ranges, warpers, slashers, sanforizers, and numerous other pieces of finishing equipment. Mechanical control of speed has been used with varying degrees of success. Acids, moisture, fly, and dirt result in rapid wear and necessitate frequent adjustments on mechanical drives. Electronic controls are housed in a small, enclosed cabinet and may be located at the electric motor or at a distance from it. Complete enclosure and elimination of mechanical controls allows this mechanism to operate in practically any type of atmosphere.

Practically any shunt-wound d.c. motor may be used with such controls; but motor characteristics will, to a large measure, determine final results.

Simple speed control can be obtained by a rheostat in the shunt-field-winding circuit, electronic tubes being used for a.c. to d.c. conversion. This type of control may be used where a speed range of not over 4 to 1 is desired.

When a greater speed range is desired, a variable voltage system of control is utilized to provide armature voltage and field current in the motor. This type of system may be used to control speeds over ranges from 100 to 1, although normal range is 20 to 1 below the base speed of the motor.

A remote-control station is usually provided when armature voltage and field-current regulation is employed. A forward, reverse, and stop push-button along with a forward-speed dial and a reverse-speed dial, constitute the controls. The speed of the motor may be predetermined by setting the forward-speed dial. The motor is brought up to speed by simply pressing the forward-speed button, and the speed will remain constant regardless of motor load. Hence, aside from providing a variable-speed control, electronic tubes also provide constant speed, regardless whether the motor is operating under no-load or under full-load conditions. Speed may also be preselected when motor reversal is desired.



Ultra-violet germicidal lamp is being used in dispensaries and offices to kill air-borne bacteria. Such lamps may have unusual textile uses for combating mildew. *Photo by Graybar Electric Co.*

No-load to full-load speed variations, when set for constant speed, will not vary over 4% for systems having not over a 10 to 1 range. In systems with a 20 to 1 range the speed variations will not exceed 8% from no load to full load.

POWER-HOUSE APPLICATION. Some large communities have anti-smoke ordinances which define the amount of smoke that may be exhausted from the mill smoke stack. In such instances mills have installed smoke-density indicators, which operate on the photoelectric principle, to comply with such ordinances. In other instances mills have installed such equipment in an effort to obtain better combustion, resulting in lower power costs.

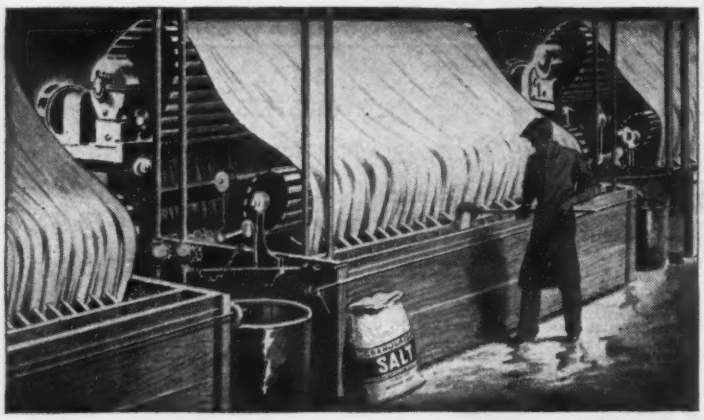
Frequently a recording unit is connected to the indicator so as to produce a 24-hr. chart showing boiler operating conditions. Often, lights are connected to flash when the haze becomes too light, an indication that excessive air is present, or flash when it becomes too heavy, so corrective measures may be taken.

PHOTOELECTRIC CELLS. One of the simpler of electronic devices is the photoelectric cell, commonly known as the "electric eye." This device has been used successfully in textile mills as cloth-straightening devices, as units which assist in cutting fabrics to predetermined lengths, as door openers, and for many other purposes.

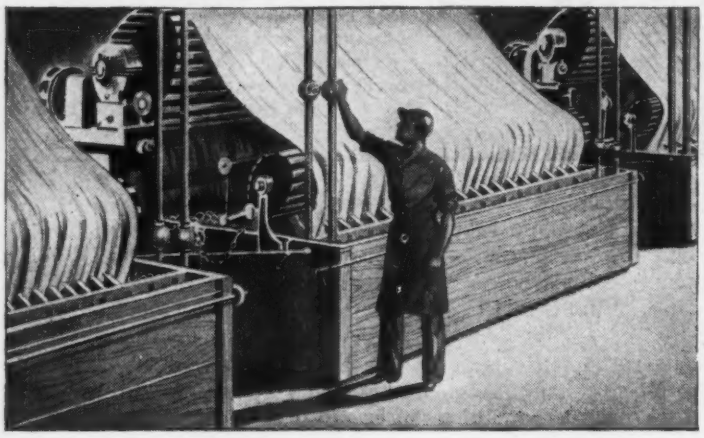
Many applications await the use of

LIXATE BRINE ASSURES LEVEL DYEING

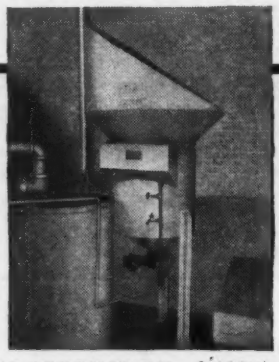
...Saves up to 20% Salt!



UNEVEN DYEING often results when dry salt is thrown into the dye box. Undissolved salt grains accumulate in the bath, causing uneven exhaustion of the dye.



TURN A VALVE and Lixate Brine disperses evenly throughout the dye bath. Being liquid, there are no salt grains to cause local over-concentration. Lixate Brine helps eliminate spotting, streaking, and white edges. No undissolved salt settles to the bottom of the vats to be wasted when the dye baths and rinses are dumped.

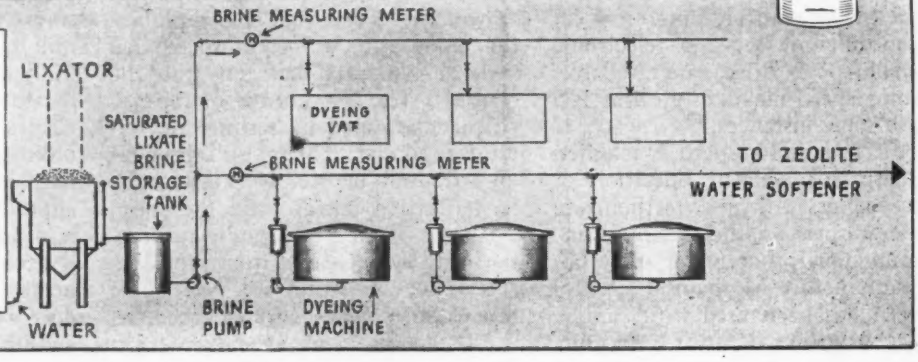


AUTOMATIC PRODUCTION of 100% saturated, crystal-clear brine is yours with the Lixator. Mechanically perfect, the Lixator cuts costs too—saving up to 20% salt; utilizing inexpensive Sterling Rock Salt. Installation requires no heavy investment. Shown is the Lixator installed by the Fairy Silk Mills at Shillington, Pa.

ACCURATE BRINE STRENGTH as desired in the dye bath is an easy matter when you start with 100% saturated Lixate Brine. And a salometer reading will always give proof of Lixate's 100% saturation in contrast with ordinary brine. Make tests at any time—the brine is always saturated. One gallon will always contain the same amount—2.65 pounds—of salt.

INSTANTLY ON TAP!

Lixate Brine eliminates production interruptions. *Piped* to wherever you use brine in your plant, it saves the time and labor of transporting dry salt and mixing brine. No salt wasted through dissolution in storage, handling in wet containers or spills on floors.



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this unit to asisst in the operation of mechanical controls. Any place where a beam of light may be interrupted to bring about a mechanical action, whether it be stopping a machine for safety or other reasons, securing color register in printing, operating a jacquard cutter, or controlling a cloth cutter, offers a possibility for utilizing an electric eye in a textile mill. Already applications of relays have been made to operate stop motions on pickers, beamers, shears, etc.

Another interesting application of electronics is for the control of lighting. An automatic lighting-control photoelectric relay may be adjusted to turn lights on automatically in a mill when the intensity of illumination reaches a point where it constitutes an eye-strain for employees.

Floatless control of liquid level in size boxes and in other processing operations where a constant liquid level is desired is also possible with an electronic relay.

OTHER DEVICES. Recent development of an ultra-violet lamp for destroying bacteria and fungi offers unusual possibilities for application in the textile industry. Many fabrics are affected by mildew. It is suggested that experiments might be conducted on the germicidal properties of such lamps when cloth is exposed to its radiation so as to control mildew.

Ultra-violet lamps, such as light-fastness testers, must be classed as electronic equipment, as must also fluorescent lamps. Such equipment will be found in almost every textile mill.

The electronic microscope with which magnification as great as 30,000 diameters is possible is already being used in textile research. This equipment has been of value in the study of the microscopic structure of the cotton fiber and of the wool fiber. Then, the spectrophotometer, also an electronic instrument, has found extensive use in color-matching and in the development of dyes for the army. Photo-electric scanning heads are employed to determine fiber length and distribution. Electronic drying was described in the August issue of TEXTILE WORLD, page 96.

Chemists use electronic equipment for checking the pH of their dyebaths, and also instruments relying on electronics to indicate moisture content of cloth. Such are only a few of the electronic applications surrounding the mill-man.

A simple, inexpensive photoelectric outfit consisting of a light source (left) and a photoelectric cell and relay (right) may find extensive use in textile mills. *Photo by Westinghouse Electric & Mfg. Co.*

10 Years of Cotton Textiles

	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944
EQUIPMENT											
Spindles in place at beginning of year	30,938,340	30,889,484	29,253,444	27,700,194	26,704,476	25,986,620	24,943,302	24,532,146	24,146,130	23,845,746	23,342,922
Increase or decrease from preceding year	503,834	48,856	1,636,040	1,553,250	995,718	717,856	1,043,318	411,156	386,016	300,384	503,824
New installation, additions and replacements	529,840	214,874	469,316	772,724	178,280	349,416	414,974	449,848	210,456	7,752	
OPERATION											
Spindles active at any time during year ending July 31st	27,742,462	26,700,946	24,664,428	25,419,110	24,774,004	23,731,050	23,585,938	23,389,454	23,607,508	23,429,252	
Spindles idle during same period	3,195,878	4,188,538	4,589,016	2,281,084	1,930,472	2,255,570	1,357,364	1,142,692	538,622	416,494	
Average number of active spindles based on twelve monthly reports	25,119,435	23,421,150	23,373,147	24,079,936	22,042,442	22,306,734	22,410,483	22,945,121	23,037,332	22,738,741	
Intermittent spindles (being the difference between average active spindles and those active at some time during year)	2,623,027	3,279,796	1,291,281	1,339,174	2,731,562	1,424,316	1,175,455	444,333	570,176	690,511	
Percentage relation of average active spindles to spindles in place	81.19%	75.82%	79.9%	86.93%	82.54%	85.84%	89.85%	93.53%	95.41%	95.36%	
Spindle hours run	75,711,412,882	76,017,361,934	91,773,252,676	95,591,131,816	75,925,187,178	92,559,108,308	98,183,985,391	121,772,205,730	133,492,717,810	125,380,341,006	
Hours run per average active spindle	3,014	3,246	3,926	3,970	3,444	4,149	4,381	5,307	5,794	5,514	
MARKET											
Production in square yards	6,878,579,000	7,135,276,000	8,613,837,000	9,447,914,000	7,502,168,000	9,044,979,000	9,593,597,000	11,327,903,000	12,418,160,000	11,663,706,000	
Exports in square yards	226,306,000	186,569,000	200,501,000	236,251,000	319,634,000	367,466,000	357,925,000	586,739,000	* 450,000,000	* 350,000,000	
Imports in square yards	41,533,000	63,674,000	114,195,000	147,320,000	58,282,000	111,817,000	84,344,000	* 75,000,000	* 25,000,000	* 15,000,000	
Available for domestic consumption	6,693,806,000	7,012,381,000	8,527,531,000	9,356,983,000	7,240,816,000	8,789,330,000	9,319,976,000	10,816,164,000	11,993,160,000	11,328,706,000	
Population at July 1st	126,626,000	127,521,000	128,429,000	129,257,000	130,215,000	131,200,000	131,970,000	133,203,000	134,656,000	* 136,500,000	
Available for per capita consumption in square yards	52.86	54.99	66.40	72.39	55.61	67.00	70.63	81.20	89.06	81.53	

*Data assembled by the Association of Cotton-Textile Merchants of New York from Bureau of Census reports and information obtained through courtesy of machinery builders. Cloth production for non-census years prior to 1941 has been estimated to correspond to spindle-hour activity. Cloth production for 1941 is WPB estimate. * Partly estimated.*

Powell's Past ...your assurance of Future Performance

Fig. 1816—Gate Valve for 125 pounds W.S.P. Has flanged ends, outside screw rising stem, bolted flanged yoke and taper wedge solid disc.

For every problem in flow control, there'll always be a POWELL Valve to lick it!

Powell Valves for controlling flow in your industry were not just "born"—they're a product of evolution—the result of nearly a century of patient study, research and experimentation by Powell's staff of Engineers and Metallurgists. Therefore you can be sure TODAY that TOMORROW—as in the past—there'll be Powell Valves to meet every existing requirement for dependable flow control. Here are a few examples of the POWELL Line of All-Iron Valves—especially suited for handling caustic soda, ammonia, dyes, mordants, acids and other media destructive to copper and copper base alloys. The complete POWELL Line also includes all types of valves in a wide variety of pure metals and special alloys to meet every requirement for corrosion resistance.

The Wm. Powell Company

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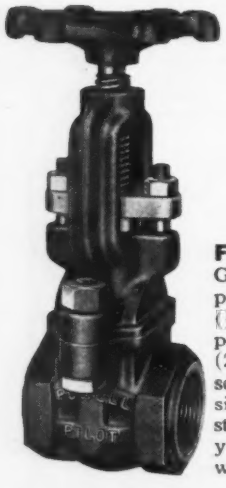


The valves shown are available made in all Iron or Iron with Stainless Steel Trim, depending upon the services in which they are to be used.

Fig. 480—"Pilot" Gate Valve for 150 pounds W. S. P. (½" to 2") and 125 pounds W. S. P. (2½" to 3"). Has screwed ends, outside screw rising stem, bolted flanged yoke and taper wedge solid disc.

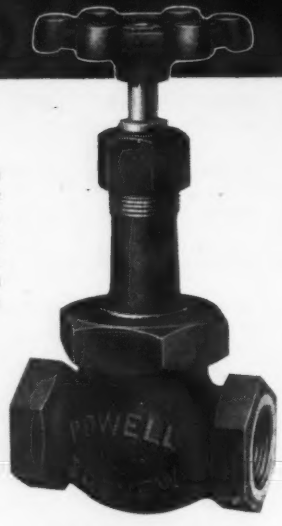
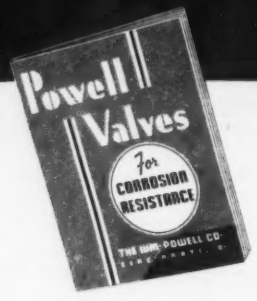


Fig. 171—Globe Valve for 150 pounds W.S.P. Has screwed ends, union bonnet and regrindable, renewable iron disc.



Write Dept. R, The Wm. Powell Co., for our new booklet—"Powell Valves for Corrosion Resistance."

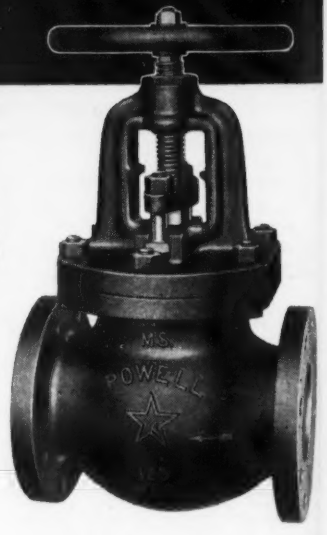


Fig. 457—Globe Valve for 125 pounds W.S.P. Has flanged ends, outside screw rising stem, bolted flanged yoke and regrindable, renewable iron disc.

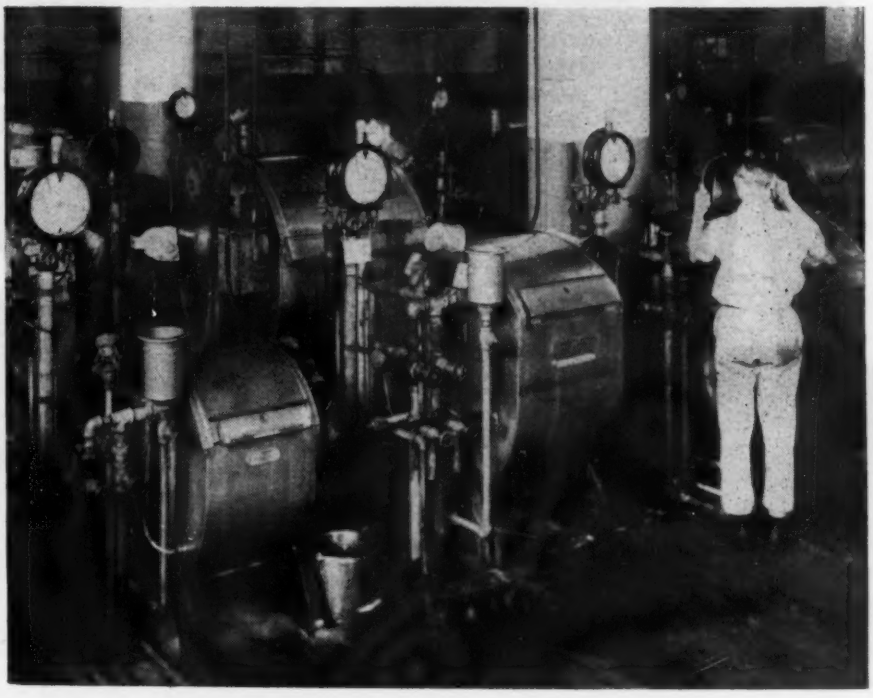
POWELL VALVES

Dyers Suggest Methods For HANDLING HOSIERY

HIGHLIGHTS: Formula Given for Dyeing Army Wool-Cotton Socks — Cuprammonium-Acetate Unions Require Care in Selection of Dyes — Time and pH Influence Tiger Stripes — Preboarding Acetate May Be Unnecessary.

HOW TO SECURE uniform dyeings and produce acceptable shades with the proper fastness qualities has taxed the ingenuity of many hosiery dyers. The difficulty of maintaining peacetime quality standards or of meeting government procurement requirements is apparent where dyers have had to work with new fibers, cope with changes in synthetics yarn, and find substitutes for scarce dyes. Difficulties have presented themselves in the preparation and finishing of hosiery due to changes in finishing compounds or non-uniformity of yarns.

Some concrete problems which were presented and discussed at a recent dyers' and chemists' association meeting are enlarged upon here. They are dyeing and finishing of new-construction Army wool-cotton hose in O. D. No. 9 shade, union dyeing of women's hosiery containing cuprammonium and acetate yarn, preventing tiger stripes in dyeing women's cuprammonium hosiery, and pre-boarding of acetate hosiery.



Cuprammonium-acetate hosiery can be scoured and dyed in one bath in machines such as shown here.

ARMY WOOL-COTTON HOSE. The new construction of Army wool-cotton hose must be dyed to meet fastness requirements of the Quartermaster Depot. Suggestions have been made that, if the goods are prescoured, they should be run not over 25 min. at higher than 160–170° F. and dyed with both cotton and wool colors in the bath, to obtain the best union. Some dyers think it advisable to add acetic acid to the bath to help exhaust and improve fastness of both wool and cotton colors before the goods are given the one or two hot washes prior to final finishing. Dyers state that the dyeing quality of wool yarn varies a great deal and that some hose requires 200° F. to scour satisfactorily if level dyeing is to result.

The 13-in. Army cushion-sole sock with 100% wool in the terry in the sole can be dyed satisfactorily by the procedure outlined by K. T. Williams, of Duke Hosiery Corp., Hickory, N. C., as follows:

Prescour hosiery with 5% Modinol DN paste run at about 200–210° F. for 20 min. Following this, drop the bath. Bring up a new bath to a temperature of 120° F. During this period enter 1% Alkanol WXN and then proceed with dyeing.

The formula for a 150-lb. lot of the socks follows:

Cotton Dyes	
Orange R G L	2000 gr.
Blue S F L	550 gr.
Yellow B B L	120 gr.
Wool Dyes	
Brown 2 R S	450 gr.
Yellow G S	1000 gr.
Black B B N	685 gr.

Dyes are boiled in a bucket and dissolved well before entering.

The dyebath is run for 5 min. at 120° F., after which the temperature is brought to 200° F. and the dyeing continued for 20 min. Salt is added in two parts as follows: 10% salt is entered slowly and run for 10 min. and then again 10% salt is entered slowly and run for another 10 min. If a sample taken at this point proves satisfactory, the bath is dropped, and a new bath is brought up. The batch is rinsed for 5 min. at 140° F. The bath is again dropped and the batch rinsed cold for 5 min.

This formula gives a union between 100% wool sole and the body, which is 50% wool and 50% cotton.

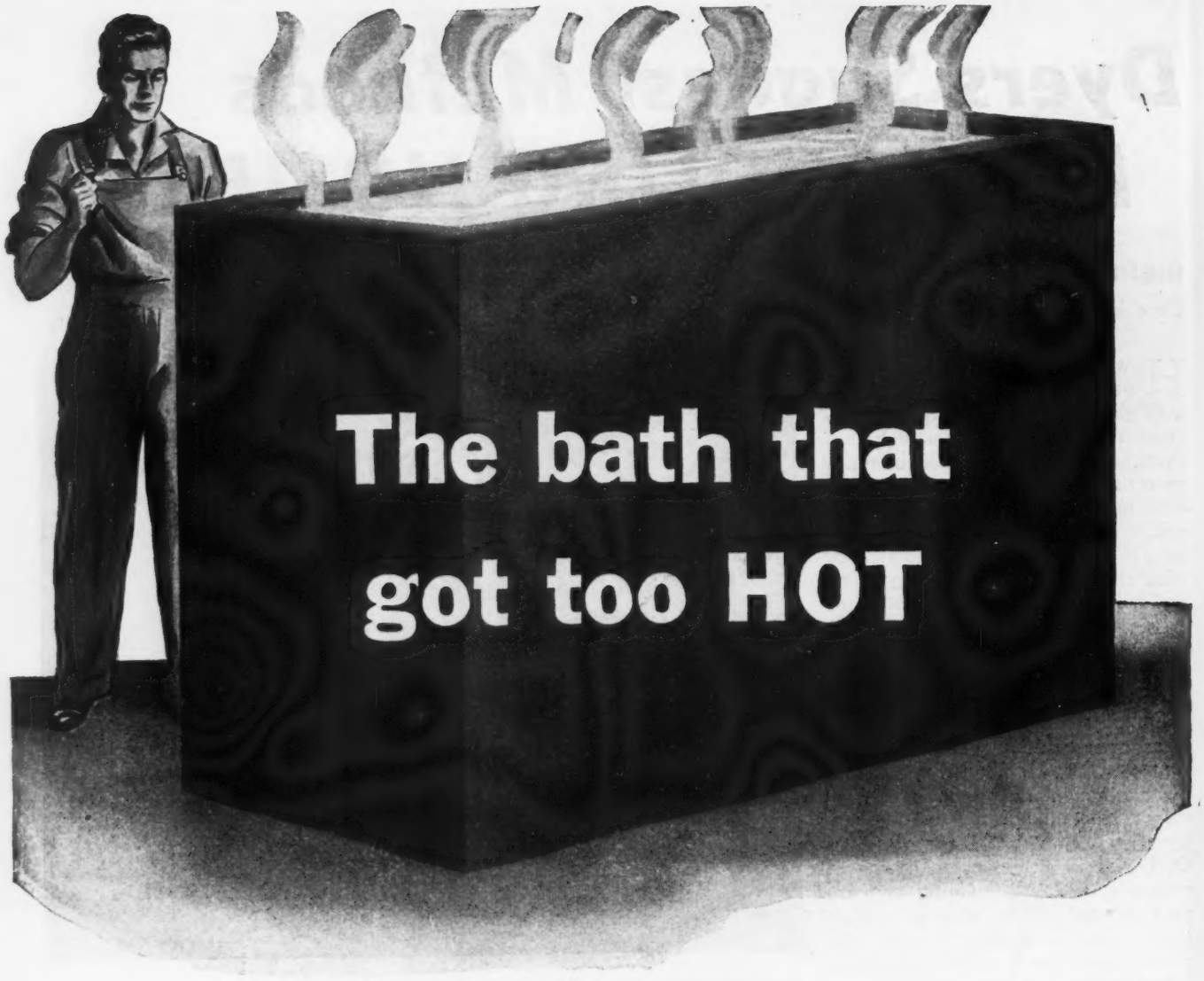
CUPRAMMONIUM-ACETATE UNION. Women's hosiery containing cuprammonium and acetate yarns shows good union dyeing when scoured and dyed in one bath. Temperatures over 170° F. should be avoided.

Some of the most desirable colors for obtaining unions between mercerized cotton and cuprammonium yarn on hose are the following:

Direct Fast Brown B R L
" " Orange W S
" " " G L
" " Red 8 B L (For shading.)
" " Black L

As a whole, direct yellows, blues, violets, and greens are not satisfactory

(*Continued on page 224*)



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Corrosion and abrasion are enemies of aluminum just as rust is an enemy of steel. To make aluminum corrosion and abrasion resistant, a thin protective film of aluminum oxide, approximately one ten thousandth of an inch thick, is applied electrolytically in an anodizing bath.

To produce a satisfactory oxide coating, it is necessary that the temperature of the bath be kept within certain limits. However, because of the large amounts of electrical energy used in the anodizing process, tank temperatures tend to rise dangerously, resulting in an inferior oxide coating.

This condition is remedied through the use of General Electric Industrial Cooling Equipment which, by maintaining a constant bath temperature, makes possible a superior anodizing job.

This is just a single instance of the many ways in which G-E Industrial Cooling Equipment is contributing to better, faster, more economical production techniques. These new techniques . . . ready to assist you *now* in war production . . . will be available for any commercial or industrial application once the war is won.

An application digest concerning the use of G-E Industrial Cooling Equipment in the anodizing process is now on the press. For your free copy, write—on your business letterhead—to:

General Electric Company, Air Conditioning and Commercial Refrigeration Divisions, Section 448, Bloomfield, New Jersey.

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TEXTILE Equipment NEWS

MACHINERY AND SUPPLIES

Tricot Dryer

A new dryer has been announced for use particularly on tricot fabrics, as the result of work done by the American Viscose Corp., and Proctor & Schwartz, in conjunction with a southern tricot knitting mill. The dryer, manufactured by Proctor & Schwartz, Inc., Seventh St. & Tabor Rd., Philadelphia 20, is known as the Proctor suction cylinder dryer.

The heart of the machine is a large perforated cylinder which is covered with a coarse wire screen and then a fine mesh screen. For drying some goods, on top of this there is also a scrim cloth covering. Around this cylinder runs a holding-down blanket of very open mesh. This blanket holds the cloth against the cylinder and gives width control.

The air flow in the dryer is through the cloth to the center of the cylinder. Inside the cylinder there are adjustable disks to compensate for the width of the cloth. They automatically force the air to go through the cloth and not bypass it, which would be possible if the disks were not used.

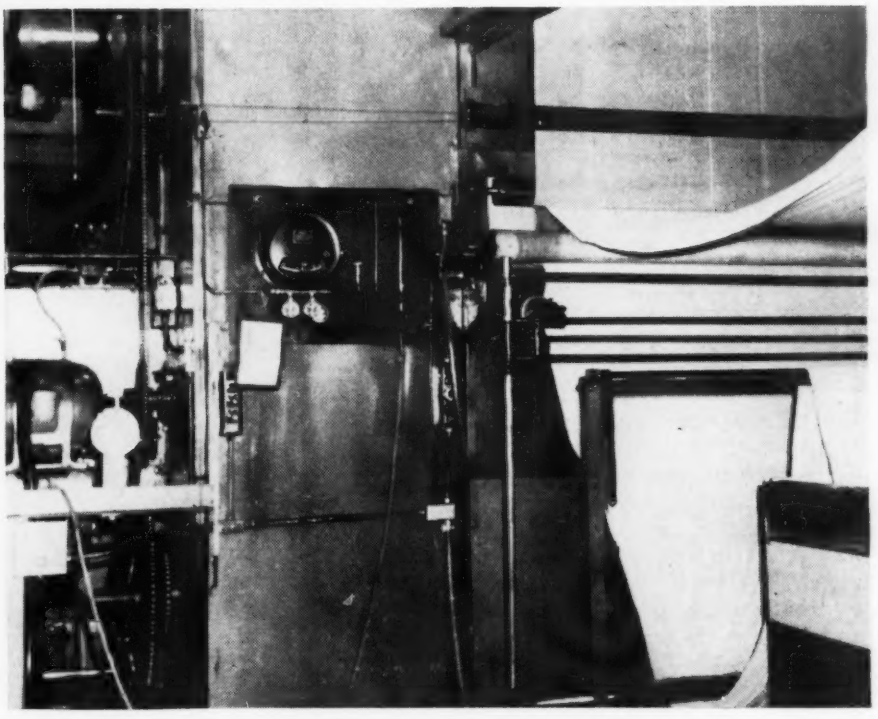
Two 15 hp. fans are used to force the air through the cloth and to circulate it inside the dryer. The machine will take cloth up to 60 in. in width, which would be the equivalent of 120 in., open width, since the material is handled in tubular form. (A marking device is used in knitting to stamp the selvage at regular intervals to assure proper seams.)

One of the advantages of the machine is that it occupies a space 15 ft. by 15 ft. which is approximately one-third of the floor space required for other types of drying equipment.

It is claimed that not over 2 lb. of steam are required to evaporate a pound of water. The heat coils used are of the extended-surface internal-type pipe, and in front of the coils is placed a screen which can be easily removed through a side door for inspecting and cleaning.

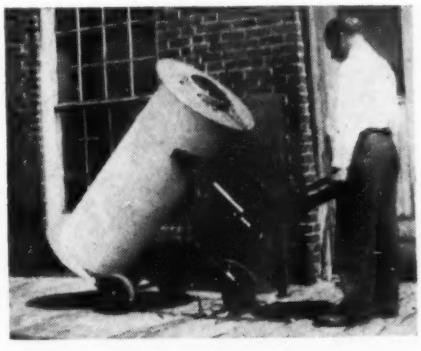
The dryer is of all-metal construction, utilizing 1½-in. insulation. The panel is formed from two pieces of steel with felted rock wool between. All edges are provided with cork seals for clamping the framework to reduce to a minimum the inside and outside metal contact and improve insulation.

Speed regulation is provided by a P.I.V. Link-Belt speed regulator of 6-1 ratio. This gives a speed range of 13 to 78 yd. per min., approximately. Steam pressure of 100 lb. minimum is required. An exhaust control is provided which is operated by means of manual setting of a damper. Approximately 33 hp. is required to operate the machine. Air-operated Foxboro controls are used to keep temperature uniform. Normal temperature is 250° F., although it can be varied from 200-250° F.



New dryer for tricot fabrics has speed range of 13 to 78 yd. per min (Proctor & Schwartz)

TRUCK FOR HANDLING DYE BEAMS

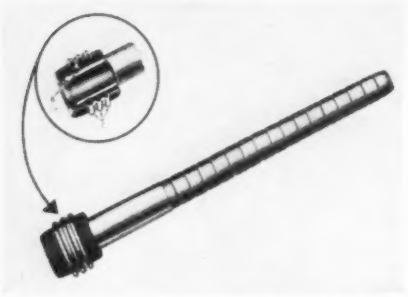


A three-wheeled, rubber-tired, hand-truck equipped with a special bracket to permit the handling of heavy dye beams, is being manufactured by Burlington Engineering Co., Graham, N. C. One man is able to lift, control and transfer a beam to various parts of the dyehouse without strain or injury. A special safety chain, located at the top of the truck, can be used to lock the top of a beam in place and prevent it from tipping in transit.

Bobbin for New Automatic Looms

A built-up paper, plastic, and metal bobbin for use in automatic looms, has been produced by American Paper Tube Co., Woonsocket, R. I.

This bobbin, it is claimed, solves



Bobbin made of paper, plastic, and metal (American Paper Tube)

many of the bobbin problems sometimes encountered, particularly in the winding and weaving of synthetic yarns, such as breaking of filaments due to splinters and other imperfections on the surface of the bobbin, poor winding caused by unbalanced bobbins, imperfections in the cloth because of imperfect transfers or misalignment of the bobbin in the shuttle, and the crushing of bobbins due to the tremendous pressure created by high-twist yarns, particularly nylon, especially when subjected to steaming and conditioning.

The barrel of the bobbin is made by laminating tough paper around a mandrel. The laminae are cemented together with a waterproof adhesive and impregnated with plastic, forming a barrel that is highly resistant to steaming and conditioning and will not distort, except from abuse. In the latter case, it will often straighten out on the spindle, because of its great resiliency. It has well-rounded corrugations and is turned in at the nose so there are no exposed laminae to catch portions of the yarn wound on the bobbin.

A plastic head *A* is molded to the lower end of the barrel *B*, which is flared to imbed it solidly in the plastic. At the same time that the barrel is molded to the head, the head is also molded to the rings. Instead of the usual three separate rings, the Plasti-Weld rings *C* consist of one hardened steel casing formed to close die tolerances. Since this casing is molded and completely reinforced by hardened plastics, it cannot distort nor cause the bobbin to be incorrectly positioned in the shuttle. Furthermore, it eliminates the possibility of damage to the yarn on adjoining bobbins, which frequently occurs with conventional interrupted rings.

The plastic from which the head is molded is a highly shock-resistant thermosetting material which will not dent, chip, or splinter to the point where it is unusable. At present, according to the manufacturers, the Plasti-Weld bobbin is made only in the standard rayon size (No. 5 Draper).

Electronic Power Generator

A type 15-B electronic power generator to be used in connection with special applicators for heating textile cord and yarn materials in drying and twist-setting operations, is being manufactured by Radio Corporation of America, RCA Victor Div., Camden, N. J.

Dielectric heating techniques, employing electrical frequencies of several million cycles per second, improve

Electronic power generator showing operating controls and protective relays (RCA)

product quality by generating uniform heat in the material being processed, and cut processing time from hours to minutes in many operations. The RCA Type 15-B generator, capable of delivering up to 15 kw., is normally furnished with tuning inductors for operation on spot frequencies of 2,000,000 cycles, 5,000,000 cycles, and 10,000,00 cycles, covering the range generally used for dielectric heating.

Special features include an auxiliary remote control unit, providing complete operating control at a location convenient to the load assembly, and a thorough system of protective devices to insure the safety of both operating and servicing personnel and the equipment itself.

The high-frequency output is obtained from a stabilized, self-excited oscillator employing two RCA heavy-duty air-cooled power tubes (RCA-892-R), supplied with high voltage d-c by a three-phase, full-wave rectifier.

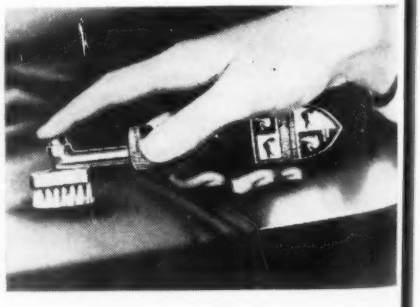
Four meters at the top of the unit provide an instantaneous check on operating conditions. Operating controls and protective relays are located on the front panel, and are protected by an outer hinged door. Pilot lamps on the control panel and on the remote control station indicate when the 3-phase 220 v. power is "on" and when the high voltage is applied to the plates of the power tubes.

Full-length doors on both sides of the cabinet, giving ready access to tubes and components, are equipped with interlock switches which automatically turn off the high-voltage rectifier when either door is opened. The high-frequency transmission and load circuits are completely free from hazardous d-c voltages. Automatic protective relays also guard the tubes against accidental damage.

The air-cooled power tubes, utilizing a built-in forced-draft cooling system, increase flexibility and reduce installation and maintenance expense by eliminating the motor, pump, radiator, tank, and piping required for water-cooling. The use of an air-cooled high-voltage transformer eliminates all necessity for locating it outdoors or in a fire-proof vault to meet Underwriters' requirements.

Brush Speeds Spot Removing

To help solve the problem of removing spots, dirt, ink, grease, paint, and other foreign substances from textile materials, the Rivet-o Mfg. Co., Orange, Mass., has developed a unique "Speed-Mo" fountain brush. The



Small brush for spotting fabrics (Rivet-o)

cleaning fluid is contained in a bottle which also serves as the handle to the brush. This bottle-handle can be unscrewed and refilled. The cleaning fluid flows through a specially designed neck and out through the brush itself; the flow of the fluid is controlled by the finger-tip operation of a push-button.

Oil-Impregnated Spinning Saddle

Announcement has been made by John C. Turner, Service Engineer, P. O. Box 916, Atlanta, Ga., of a W-improved spinning saddle for long draft cotton spinning frames which

requires oiling only once every 40 to 48 hr.

The bearing surfaces are made of oil-impregnated metal and wood, doing away with wicks, as found on the ordinary type of saddle. Flow of oil from the bearing surfaces is properly controlled and prevents excess oil on yarns and cots. Vertical and horizontal adjustments are provided. Saddles will fit all long-draft spinning frames with centers from 1⅛ to 2 in.

Useful Accessories for Textile Mills

A switch combination, known as Ashcroft Duraswitch, has been announced by Manning, Maxwell & Moore, Inc., Bridgeport, Conn. One type of Duraswitch is available for pressure only, whereas another series uses both pressure and temperature applications, as a pressure control and pressure gage combination, or temperature control and thermometer combination.

Nervous Weld, a process developed by Metallizing Co. of America, 1330 Congress St., Chicago, deposits atomized particles of metal which are welded to the surface and pressed, leaving a metal which is welded and forged. This process was developed for reclaiming defective aluminum castings, and for salvaging bronze, gray iron, malleable and steel castings. Temperature never rises above 125° F.

A globe-type corrosion resistant valve, called Karbate, is being manufactured by National Carbon Co., Inc., 30 E. 42nd St., New York City. This valve resists practically all corrosive chemicals without being affected by extreme thermal shock. The valves are available in 1- and 2-in. sizes, and tested to withstand 50 lb. pressure. The inert chemical properties of the material prevents corrosion-caused sticking of the moving parts.

A laboratory scale, known as the Toledo Laboratory Computagram, has been produced by Toledo Scale Co., Toledo, Ohio. This scale features an avoirdupoismetric chart which assists when weighing materials that are frequently specified in the metric system or the English system. The chart is graduated for each gram, or as fine as 1/100-lb.

A solution for the hardening of steel, known as Steel Temp, has been developed by Steeltem Chemical Co., 51 E. 42nd St., New York 17, N. Y. This chemical solution is used for hardening wearing parts on industrial machinery subject to considerable wear, especially where abrasion or friction enters the picture. Gears, pinions, axles, shafting and other maintenance parts may be treated, as well as high-speed cutting tools that operate with a rotary or uniform motion.

STAINLESS STEEL TEXTILE REELS

A new type of girder design to give far greater strength to stainless steel textile reels has been developed, according to Rodney Hunt Machine Co., Orange, Mass. This new type of patented construction is applicable to both large and small reels and keeps the reel from bending or twisting under heavy loads.

Mill Maintenance TO KEEP 'EM RUNNING

Lubricating Oil for Roto-Coner

According to a recent issue of *Getting the Most from Winding,* published by Universal Winding Co., it may not always be possible to procure small cans of the oil normally recommended for these machines.

Some mills may prefer to purchase their oil from time-to-time from a local supply. The following are the specifications which have been determined as exactly right for the Roto-Coner:

Gravity A.P.I.	21–23
ASTM–Open Cup Flash	350–360°F.
Fire	400–420°F.
Viscosity at 100°F. Saybolt	280–300 sec.
Pour Test ASTM	−25°F.
ASTM Colorimeter No.	1½–2
Conradson Carbon Max.	−.03%
Demulsibility	Good
Ash	None

Conditioning Air for Pneumatic Instruments

Maintenance of pneumatic control-instruments in finishing plants and in dyehouses is essential. Chemical vapors are sometimes present in the air, and, unless air furnished to the instruments has been properly conditioned, maintenance costs will be excessive.

The problem of furnishing clean, dry, compressed air to pneumatic instruments requires careful analysis to determine the simplest methods of treatment, according to an article entitled "Conditioning of Instrument Air," appearing in the May-June issue of *Instrumentation,* published by The Brown Instrument Co.

The following tabulation summarizes the practical points recommended for improving the quality of instrument air.

COMPRESSOR–

1. Carefully locate air intake.
2. Use intake filters.
3. Do not overload compressor.
4. Provide rigid maintenance schedule for all equipment.

MOISTURE–

1. Always use efficient after-coolers for moisture removal.

A. Use refrigeration where tap-water is not cold enough.

B. Locate after-cooler on high-pressure side of compressor.

C. Delivery pressure from compressor should not be lower than 80 lb. per sq. in. to obtain efficient moisture removal in after-cooler.

2. Where cooling alone is not adequate, chemical dryers may be used.
3. All air lines should be trapped to remove water.
4. Piping should be pitched and provided with suitable traps or drains when it passes through any cold space where condensation might occur.

(*Continued on page 164*)

5. Dripwells should be used at each instrument.

6. Check-valves should be used in any line where there is a possibility of liquids backing into the air systems.

OIL—

1. Oil contamination is kept to a minimum by careful compressor operation. Most oil vapor may be removed by use of an after-cooler.

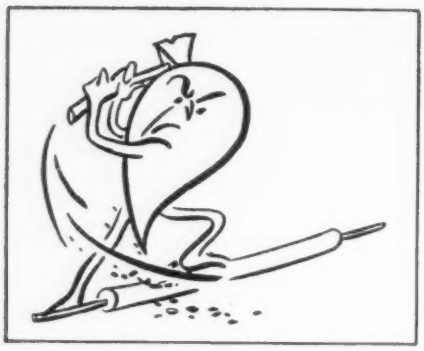
2. Where excessive oil is present special filters containing fuller's earth are very effective.

SOLID MATTER—

1. Mechanical filters provide the most satisfactory means for removing solid matter from an instrument air-supply.

2. A filter should be located at each instrument.

3. The use of non-ferrous pipe or tubing for air transmission is the most effective method for preventing rust, or scale formation.



Oil is quick to attack insulation when it reaches it.

Stray Oil on Electric Motors

Because it fights friction, oil is often called the "lifeblood" of motors. And inside bearings, that's exactly what it is. But outside bearings, oil is strictly poison to electric motors. Such are the comments appearing in "A Guide to Wartime Care of Electric Motors," published by Allis-Chalmers Mfg. Co.

Sticky oil catches dust—just as flypaper catches flies. When both oil and dirt cover a commutator, good commutation is impossible to obtain. The faces of brushes become glazed and packed with dirt. Harmful sparking is sure to result.

Oil also harms commutators by deteriorating the mica insulating segments between bars.

When oil and dust have been allowed to build up, the heavy mess should be removed with the aid of a solvent—preferably a non-inflammable one, such as carbon tetrachloride. If brushes or scrapers are used, be careful not to scrape the insulation.

Use solvents with caution, too, taking care not to soak the insulation as the solvent is apt to have a softening effect. When all the oil and dirt are out, dry the windings and apply insulating varnish.

Much can be accomplished in fighting stray oil by keeping a motor's own lubricating oil where it belongs. For example, never lubricate sleeve bearings equipped with oil rings when the motor is running. The oil level then does not indicate full supply. A certain amount of oil is riding the ring above the level and overfilling and escape of oil are apt to result.

And check oil seals, well covers, and plugs at regular intervals to see that they are tight. Once outside a bearing, oil means trouble.

DYES & CHEMICALS — PRODUCTS & PROCESSES

Textile Finishes Many Applications

SYTRON; RESLOOMING; WATER-REPELLENT FINISH; Monsanto Chemical Co., Merrimac Div., Everett Station, Boston 49.

Technical considerations associated with three newly-developed textile treating processes, which grew out of research for military fabrics are announced by Monsanto Chemical Co.

Compounds credited with the ability to make sheer stockings run-resistant, remove the shine from serge suits, and make fabrics longer-lived were identified as the Sytons by Monsanto. It was also announced that the new process to make woolens shrinkproof, wrinkle-resistant, and more durable will be known as Reslooming.

A third new Monsanto process was described as imparting water-repellent qualities to cotton, rayon and wool. As with the Sytons and Reslooming, the company said, this process does not alter or impair the original and desirable qualities of the basic fibers.

Monsanto said the chemical treatments, when applied in proper formulations, leave the appearance and feel of the textiles either unchanged or benefited; that Reslooming of wool, for illustration, permits retention of the natural resilience, softness, warmth and excellent wearing qualities.

"It is also emphasized," the company said in a statement, "that these developments had their origin in research directed toward improvement of textiles which clothe, shelter and otherwise serve the armed forces. They are at present limited to military applications and are not likely to be made available to the public until Victory."

Syton treatment is accomplished through immersion, spraying or sponging—either at the mills or in the home—with what is identified technically

Two swatches of woolen fabric, once of identical size, are studied in the laboratory of the Monsanto Chemical Co., Merrimac Div., at Everett, Mass. The larger one, having been Reloomed, shrank not at all; its untreated companion lost about half of its original width and one third its original length.

Textiles will be in there pitching at the Finish!

Textiles will be filling war demands right on up until the last gun is fired, and even then—

Eleven odd million in the armed services must be clothed until orderly demobilization becomes effective.

SONOCO peace plans are ready, but like our war plans they are primarily geared to the war needs of the textile industry, right through to the finish.

We take too much pride in our war record to date not to keep it intact to the end—and beyond. The textile industry will be in at the finish, because suppliers like SONOCO will be in there too.

ARMY (E) NAVY

SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. HARTSVILLE S. C. MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY

A CRITICAL NEED SAVE WASTE PAPER

as a fine collodial dispersion of polymerized silica or quartz. In other words, individual fibers are coated with highly purified submicroscopic quartz dispersed in water.

These submicroscopic fibrils of quartz, with a diameter of less than 1/400,000-in., form a hard and translucent film over the individual fibers, improving natural sheen, giving them added strength, precluding shine and making them less likely to slip away from their companion fibers.

Deposits of less than 1% have reduced slippage on a wide range of fabrics by more than half, as measured by the standard ASTM test; and higher concentrations produce correspondingly higher reductions. Among other practical results, this means seams will hold better in Syton-treated fabrics and slips or other undergarments will have less tendency to creep out of place.

The Syton compound most thoroughly recommended is a neutral solution, substantially free from salts or electrolytes.

It may be diluted with water or solvents, is stable in mild acid and alkali, and is compatible with water solutions or dispersions of other finishing agents, resins or dyestuffs.

It is indicated Syton will normally be applied on a standard textile padder, then dried in the usual manner. No special precautions are necessary, and no curing or aftertreatment required. One application, it is said, may be expected to last the life of the fabric.

The third new process—as yet unnamed—likewise involves external treatment of fibers. Water-repellent qualities are imparted through application of a tough plastic, which is impervious to water and highly resistant to heat and chemicals.

The plastic used is a modified, thermosetting melamine. It is applied from a water solution on a standard textile padder, then cured several minutes at 265 to 270 degrees Fahrenheit. When cured, it forms a waterproof film bound so tightly to individual fibers it will last the lifetime of most fabrics despite dry cleaning or washing. Color fastness, Monsanto says, is actually increased.

Reslooming, on the other hand, impregnates individual fibers with a tough heat-water-and-chemical resistant plastic, minimizing shrinkage, increasing wear, and prolonging the life of a trousers' crease. The greatest possibilities for the process are in wool; however, Reslooming also is effective on cotton, rayon, linen and aralac.

The plastic used in Reslooming and waterproofing is a member of the family known as melamines, first synthesized over 100 years ago, but available commercially in this country only since 1939. It was only this year that the special clear, colorless and water-soluble formulations used in Reslooming were perfected.

In its present stage of development, Reslooming will be done only in the textile mill, and will require only minor changes in current production methods. The yarn or fabric is spun or woven, passed through a water solution of the special melamine compound and then cured for several minutes at about 275 degrees Fahrenheit. During the process, the plastic penetrates to the heart of each individual fiber with such permanence no way has yet been found to remove it.

Solvent for Colors

KROMFAX; Carbide & Carbon Chemicals Corp.; 30 E. 42nd St.; New York, N. Y.

"Kromfax" solvent ($HOCH_2CH_2SCH_2CH_2OH$) is offered as a solvent for acid, basic, and vat colors used in textile printing. It is said it may be employed to replace all or part of the glycerol, acetin, diacetin or triacetin commonly used to dissolve or disperse these colors.

The manufacturer asserts that colors dissolved in this solvent are deeper and fuller in shade than those produced with other solvents. Furthermore, the stability of printing pastes are improved, allowing the reuse of old printing pastes which have become laked. It is used as a solvent to clean printing rolls on which dye pastes have become precipitated.

Flameproofing Compound

PYROPRUF; Talco Corp.; 10 Hudson Place; Hoboken, N. J.

The Talco Corp. states that Pyropruf is a new and highly versatile, durable type, flameproofing compound, and can be used for the treatment of clothing and all light- and heavy-weight fabrics.

The product is organic in nature and thus differs radically from the more common inorganic salts heretofore used for flameproofing. It is said to meet the efficiency and composition requirements of U. S. Navy specifications.

The company also points out that it can be pigmented to permit dyeing during the process of flameproofing, and is compatible with compounds for mildew and fungi control, so that these may be applied simultaneously.

Its adaptability is such that it may be applied on conventional equipment, used in finishing plants; such as pads and jigs, and may be dried on cans, tenters, loop dryers, etc.

Not only is Pyropruf said to possess lack of decompositional action for fiber attack, but it is also of a highly permanent character; being insoluble in dry cleaning solutions and resistant to numerous launderings. It can be applied to all types of fibers, both natural and synthetic.

Printing Assistant

LUBRICANT D-6 CONCENTRATE, Kilcommons Chemical Corp., Providence, R. I.

It is said by the manufacturers that the use of this material in printing pastes made up with water and starch or gum thickeners will give longer runs without stops on the part of the printer to clean doctor blades. Claims are made that an increase in yardage of 600 to 1100% without a stop, may result when this product is used. These results are said to have been obtained on actual plant runs of considerable yardage.

Less Gas Fading of Acetate Colors

A new method of dyeing acetate-rayon fabrics, which gives such fabrics dyed in a number of colors a high degree of resistance to atmospheric gas fading, has been developed by the North Carolina Fabrics Corp., Salisbury, N. C., in cooperation with technicians of the American Viscose Corp., rayon producers, and dyestuff manufacturers, has been announced.

Fading of colors caused by acid gases given off from fuel combustion and other sources has been a cause of frequent complaint in the past, and extensive research work has been carried out in recent years in an effort to overcome it.

A line of six colors has been developed by North Carolina Fabrics Corp., all of which show no fading or color loss after 60 hours' exposure to atmospheric gases under test conditions. Additional colors are being developed as rapidly as conditions permit.

These fabrics are the first 100% acetate-rayon fabrics to meet the American Viscose Corp. "Crown" Tested Plan requirements for washable fabrics. This means that their colors are resistant to sunlight-crocking and perspiration, as well as to atmospheric gas fading.

6-Inch American Flag Flies Over Cherbourg
NEW YORK, June 28 — A little American flag about six inches long hangs from one flagpole over the port of Cherbourg,* Correspondent L L said tonight in a broadcast from the French port.
The flag, L said "was hung there by an American soldier, R F of Gastonia, N. C., who shinnied up the pole while the fighting was still on, tore down the Nazi swastika, and ripped off a little American flag that he wore on his shoulder. Tonight it waves bravely over Cherbourg."
* Names deleted
MEMO
W.L.F.
The invasion brassard mentioned in this clipping is one of the many war products which has side-tracked Kaumagraphs civilian production
KAUMAGRAPH
Identification Headquarters since 1901
KAUMAGRAPH COMPANY • WILMINGTON 99, DELAWARE • EMPIRE STATE BUILDING, NEW YORK 1, N. Y. • REPRESENTATIVES IN PRINCIPAL TEXTILE CENTERS OF THE WORLD.

Kinks AND SHORT-CUTS

A $25 WAR BOND FOR YOUR IDEA

A $25 War Bond will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contributions must be received not later than the last day of the month to be eligible for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production; in brief, any little device, stunt, kink, or short-cut which you have tried out in your own mill and which you believe will be helpful to other mill men. Items should contain sufficient detail to permit other mill men to utilize the ideas in their own operations. Previously published material is not eligible for the award. Judges of the contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any items submitted. Items which are accepted will be paid for at our regular rate for this type of matter with extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

In writing to this department, give your real name and address as evidence of good faith and to permit payment for items accepted. Your identity will not be published unless you give permission.

Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y.

★ THIS MONTH'S PRIZE WINNER

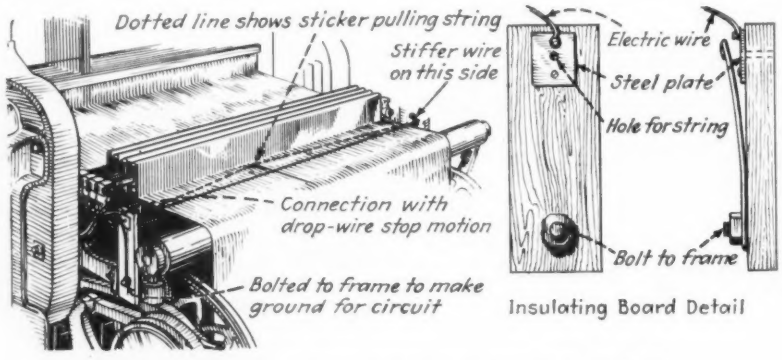
Sticker Breaker and Detector

A device designed primarily to break small warp "stickers" apart can easily be made into a detector that will stop the loom when stickers feed too close against the warp drop-wires (or lease rods, if used), as shown in the illustration.

"Stickers" are warp ends that are rolled, matted, or stuck together. If small, a string placed in end-and-end easily breaks them apart; but if large, they often cause break-outs and cloth defects. Originally, we merely used a string stretched between two strips of metal. Later, we found that by insulating one side and by providing a contact point connected to the electrical stop motion, we could make large stickers stop off the loom before any damage was done.

To insulate the device, we used an 8-in. strip of wood, 2 in. wide by ½ in. thick. This is bolted to the warp bracket along with the metal upright which is bent away from the top of the wooden insulator. A contact strip is attached at the top, through which a hole is drilled to allow the passage of the string. One end of an electric wire is attached to this contact strip and the opposite end is attached to the warp drop-wire electrode.

As large stickers feed forward toward the drop-wires, the string pulls the upright against the contact point, which closes the drop-wire circuit and stops the loom. *(K228) H. E. Wenrich, Berwick, Pa.*


Dotted line shows sticker pulling string
Stiffer wire on this side
Connection with drop-wire stop motion
Bolted to frame to make ground for circuit
Electric wire
Steel plate
Hole for string
Bolt to frame
Insulating Board Detail

When stickers exert strong pull on wire, loom is stopped off.

Recording Troubles of Spoolers and Warpers

I have found that it is a good idea to keep a notebook on troubles that occur on Barber-Colman automatic spoolers and super-speed warpers. I make an entry of the type of trouble encountered and then the cause, as follows:

"Item 36. Drop wires do not stop warper, and even after warper is stopped manually the wires do not assume the braking position.

"Cause: Usually caused by loose or broken spring on loading lever. Could also be caused by cam-arm latch-stud freezing and keeping latch from working properly.

"Item 36. Creel fan runs, although No. 5 control switch is out and cannot be stopped except by pulling creel switch.

(Continued on page 170)

TEXTILE PRINTING *Gums*

KOVAT — A cold water swelling gum for vat and discharge printing was developed by National's application research in close collaboration with the textile industry.

KOVAT is a definite challenge to all types of cook-up gums.

KOVAT saves time. It uses cold water. And it mixes in a matter of minutes. *Cook-up gums require 3-4 hours.*

KOVAT saves labor and equipment. It uses a simple tank or barrel and a portable mixer. *Cook-up gums require a steam-jacketed kettle.*

KOVAT saves storage space. Small batches are mixed fresh as needed. *Cook-up gums require storage facilities for each new necessarily large batch.*

KOVAT isn't a brash, untried newcomer. It's the result of painstaking laboratory and application research. It has proved itself in commercial use by doing a better printing job with lower solids, less gum. Full information is available — NOW!

Offices: 270 Madison Avenue, New York 16; Boston, Philadelphia, Chicago, Indianapolis, San Francisco, and other principal cities.

National also produces: HOOSIER Pearl Cornstarch; NALEX for sizing fine combed cotton yarns; LANAMYL for sizing worsted yarns; FLOJEL, uniform, thin boiling corn starches in all standard fluidities; FIBERJEL "V" for sizing filament viscose yarns; FIBERJEL "AC" for sizing filament acetate yarns; FIBERJEL "SR" for sizing rayon yarns and blends with acetate or wool.

national STARCH products

STARCHES—AND SPECIALTIES WITH EASILY DEMONSTRATED SUPERIORITY

KINKS & SHORT-CUTS

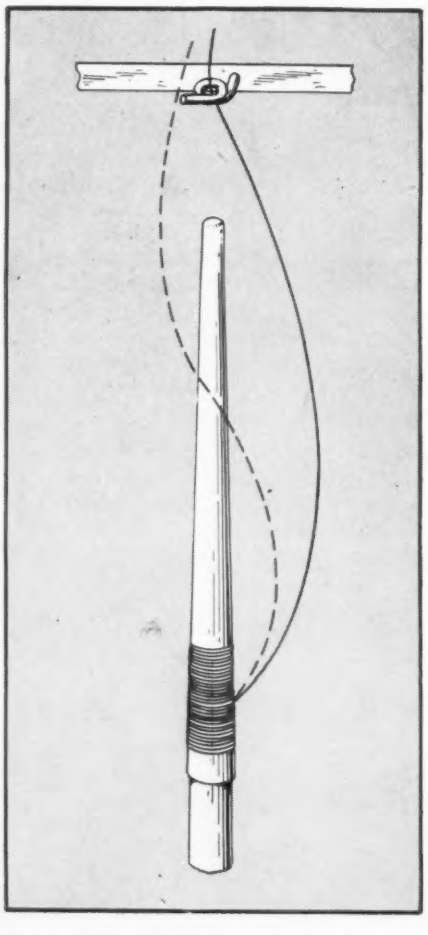
(*Continued from page 168*)

"Cause: A fan motor coil is grounded. Disconnect fans one at a time. When bad one is disconnected, the fans will stop. Send grounded fan to shop."

I have found that such a notebook kept over a period of years is very handy because some troubles occur so seldom that one forgets their causes. Also, when teaching new section men to fix the machines, it is a big help both to me and to the new men. I let them use the notebook any time they want to. (*K-140*)

Prevent Double Balloon For Better Cone Winding

Some years ago we discovered that if the cops used in coning our fine worsted yarns were high enough to prevent a double balloon of the yarn between the cop and the pigtail above it, as shown by the dotted line in the sketch, we seldom failed to wind all of the yarn from the cop without breakage. With a single balloon, centrifugal action kept the yarn from wrapping the cop and causing breakage in winding. Single balloons also prevented straining of the yarn and breakage in the subsequent knitting operation.

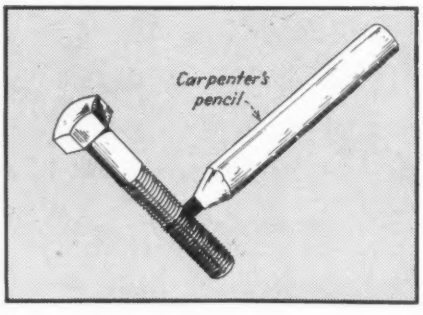


Proper ballooning permits all yarn to run off.

We had long supply spindles made which we tipped outwardly when we put the cops on them. With the long spindles we could backwind cones or tubes without changing the height of the spindles. We found 1¼ in. from the tip of the spindle to the pigtail to be best for the counts of worsted we were winding. (*K-209*)

Carpenter's Pencil Keeps Bolts Free

Often bolts become nested and are difficult, if not impossible, to remove without being damaged or destroyed. To prevent them from sticking, we have found a carpenter's pencil to be invaluable. The pencils contain a large amount of soft graphite in a handy form. It is easy to rub the graphite on a bolt before it is inserted.



Pencil's graphite forestalls rusting.

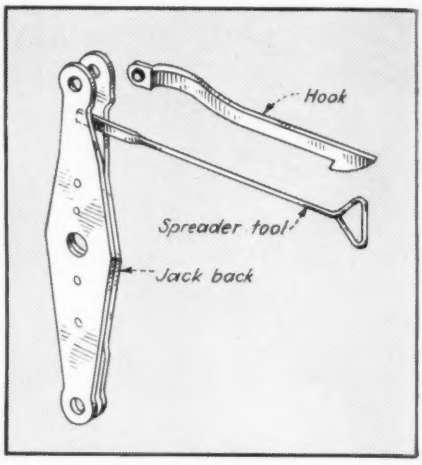
The protection offered lasts longer than that from oil.

These pencils are also useful for applying graphite between loom pinions and motor shafts so that later pinion changes can be made without resorting to a gear puller.—(K-144)

Spreader Tool for Removing Dobby Hooks

The tool shown simplifies removal of dobby hooks from the jack backs on dobby-head motions. On the pressed steel combinations, the backs are made in two parts that are riveted together and if forced apart for removing the hook, will spring back into original position without damage. If top or bottom hook shows wear and must be removed, push the spreader between the two sections near the hook trunnions and twist the handle. The old hook is removed and new hook is inserted. The handle is twisted back to first position and pulled free. The end should not be spread any more than is necessary to permit the required opening.

To make the tool, use a piece of spindle rod not exceeding $\frac{7}{16}$ in. in diameter so it will pass freely between the hook lifter wires. The spreader end is heated and flattened to a $\frac{5}{8}$-in. spread which is correct for freeing the hook trunnions. The handle is shaped as shown so that four fingers will fit over the end, allowing a good grip. The joining end is brazed to make a firm, neat tool. (*K-166*)

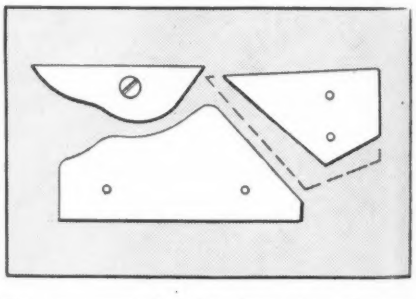


Jack spreader is made from rod which has been flattened on one end and shaped to form a handle on the other.

Cam Change Seems To Stop Drop Stitches

Drop stitches in interlock fabrics knit with every other needle is somewhat of an enigma.

Perfect cloth might be made for weeks; then, suddenly, tiny cylinder drop stitches appear. When this happens, the mechanic often nonchalantly chants the usual derogatory comments. He finds nothing obviously wrong; and, after a day or so, the drops suddenly vanish. The accompanying sketch is not a cure for these drops, but it seems to help. The cam change (see dotted line) will hold the needle butts into the race and will not allow



This exaggerated sketch shows the difference of race in cams.

(*Continued on page 172*)

CROCKER-WHEELER MOTORS for TEXTILE MILLS

FEATURES

1. Totally Enclosed Cowl-Cooled type minimizes fire hazard, resists corrosion. Protects against acid or alkali fumes, splashing or dripping corrosive liquids, air-borne moisture, steam, corrosive gases, conducting dusts, metallic chips, lint, etc.

2. Fin Type single shell construction, with all surfaces exposed and a readily removable fan shroud, gives non-clog ventilation. Easy to clean...foreign matter passes over the surfaces of and not through the motor.

3. Patented GROOVSEAL antifriction bearings — no greasing needed for at least a year—minimizes maintenance. Seal permits use of softer grease, for better lubrication and longer bearing life. Water-tight — Dust-tight — Air-tight.

4. Vacuum Impregnation with high grade insulating varnish seals out foreign matter and moisture from each individual coil...makes windings a homogenous mass... reduces hot-spot temperature and lengthens insulation life. Adherence of varnish prevents vibration of wires inside or outside of slot.

SEALEDPOWER (Cowl-Cooled) Motor...for all polyphase alternating current circuits, 2 to 15 h.p. NEMA Dimensioned.

SEALEDPOWER...Industry's Most Trouble-Free Motor...*because*

THE TEXTILE INDUSTRY has many processes where open type motor drives are unsuitable, the hazards of which are largely eliminated by this totally enclosed **SEALEDPOWER** Motor.

The design of the motor protects it against steam, drip, splash, acid, fumes and corrosion in wet processing in the Dye House, Bleachery and Finishing...also against dirt, lint and fire hazards of all preparatory machinery operations.

Crocker-Wheeler, one of the leading manufacturers in the field, specializes solely in the design, manufacture and application of electric power equipment.

As power specialists, Crocker-Wheeler field engineers know the power needs for your industry — of your particular production processes.

Call in one of our experienced engineers for specific advice on motors, generators, couplings and control... no obligation.

CROCKER WHEELER Motors Generators

JOSHUA HENDY IRON WORKS

CROCKER-WHEELER DIVISION

ESTABLISHED 1856

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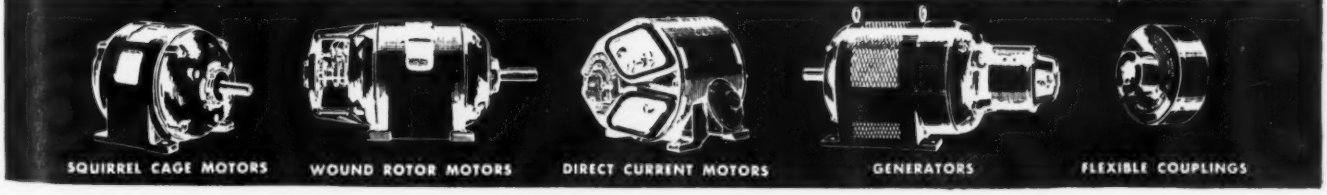


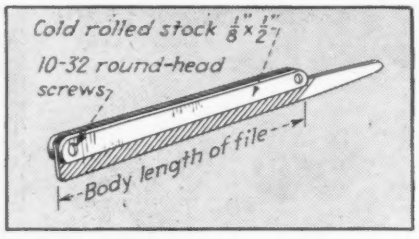
KINKS & SHORT-CUTS

(*Continued from page 170*)

the needle to drop behind the feed with the hook going below the feed hole. *(K-213)*

Holder for Thin Files Makes Them More Useful

Thin files which are used for cleaning solder out of needle-cylinder slots are easily broken. To protect the files, we use a holder made with two pieces of $\frac{1}{8}$-in. by $\frac{1}{2}$-in. stock which are fastened together with 10-32 round-head screws, thus firmly clamping the file between them as shown in the drawing. We are able to clean the slots faster than with the use of an ordinary handle, since the entire length of the edge of the file comes in contact with the work. *(K-208)*



Metal holder for file used in cleaning needle slots.

C & K Auxiliary Brake Saves Weaver Steps

We have been trying for some time to find a suitable brake motion for the opposite end of our old-model C & K looms, and I submit the following which has proved itself trouble-free and workable as our weavers would gladly testify.

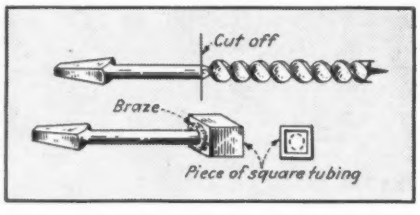
We run a $\frac{3}{4}$-in. rod across the loom, back of the round bar near the floor, with suitable bearings bolted to the side frame of the loom. We cut off the bearing part of front picker-shaft stand, which makes an ideal bearing for this rod. The $\frac{3}{4}$-in. rod will then turn freely just back of the front loom legs. The rod extends far enough on the brake end for a casting (as shown at A) to be fastened with set screws on this rod. In the slot of part A, a hook made of $\frac{3}{8}$-in. iron rod is threaded and fitted loosely, so that it moves freely in the slot. The hook end merely rests over the brake lever, just back of the pedal. When the brake is on, pressure on the pedal at *B*, will force the brake lever down. This eliminates walking to the other end of the loom and thus saves many steps for the weaver. We installed this device on 36 C & K looms about two years ago, and the arrangement is still satisfactory. *(K-217)*

Dual brake control for Crompton & Knowles loom.

Speed Tool Useful For Adjusting Let-Off

Having read of a handy speed wrench in TEXTILE WORLD for adjusting loom let-offs, I devised the tool and found it very handy. Later, I devised a simpler tool, using the same idea but with the thought of saving space in my tool box and doing away with unnecessary tools.

The alternate tool sketched in the diagram was, for me, very simple to make. A discarded 1-in. bit was cut off, leaving the long shank for the brace. To this long end I had a one-inch piece of square tubing brazed to form a fitting to take the left-off adjusting bolt head. The completed tool after welding, was dressed on a sanding stone until smooth and highly polished.



Old wood-drill bit used to make up special wrench.

When let-offs need adjusting, it is easy to secure the wrench-bit and place it in a brace. When finished, the bit is replaced in the tool box. This same tool comes in handy for other nuts which are hard to reach with ordinary wrenches. *(K-145)*

Leather Check Saves Pickers and Shuttles

An inexpensive shuttle check which we use with good results is made up using a Draper heel spring assembly, a piece of leather, and a few other small parts. The illustration shows one of these checks mounted on the box end of a loom. It took about a half-hour to install.

Arrow at A points to heel spring and top portion of leather used. Arrow at B shows bolt that holds bottom of leather.

Not shown is the fastening of the fixed end of the leather which is done by punching a hole in the leather and by using the bolt indicated by the lower arrow.

The device saves pickers and shuttles by acting as a cushion when the shuttle enters its box and hits the picker. *(K-158)*

Trick in Measuring Brake-Band Linings

One reason for a dragging loom brake is that fixers line brake bands without regard to the correct positioning of rivets. Some fixers measure the outside diameter of brake-band wheel and curve the band to correspond. Other fixers apply the lining and, after the band is in position, find the lining

(*Continued on page 174*)

THIS IMPROVED SYNTHETIC COT DRAFTS BETTER

NO OTHER SYNTHETIC COT OFFERS ALL THESE ADVANTAGES

1. **LONG SERVICE**—Accotex Cots are tough. And they can be rebuffed 3 or 4 times.
2. **GOOD DRAFTING**—Accotex Cots retain their excellent grip, because they resist slicking.
3. **REDUCED EYEBROWING**—The resistance to slicking minimizes eyebrowing.
4. **REDUCED LAPPING**—Accotex Cots have little affinity for textile fibers and are nonsweating.
5. **GOOD START-UP**—Accotex Cots are non-thermoplastic and resist flattening.
6. **SOLVENT RESISTANCE**—Accotex Cots are not affected by oil, water, dyes, or textile solvents.
7. **SEAMLESS CONSTRUCTION**—Accotex Cots have no seams—can't break open in service.
8. **QUICK ASSEMBLY**—Accotex Cots are ready glued.

. . . because it resists slicking, retains its grip longer

ARMSTRONG'S new Accotex Cots, made of cork-and-synthetic-rubber composition, are highly resistant to "slicking up" and thus retain their grip longer than any "straight" synthetic cot. It's the cork content that gives Accotex Cots this exclusive advantage, which means better drafting and reduced "eyebrowing." Other important advantages of Accotex are listed at the left.

Proof that Armstrong's new Accotex Cots help increase poundage and produce higher quality yarn has been established during the past two years in hundreds of mills where these improved roll coverings are already serving more than 2,000,000 spindles.

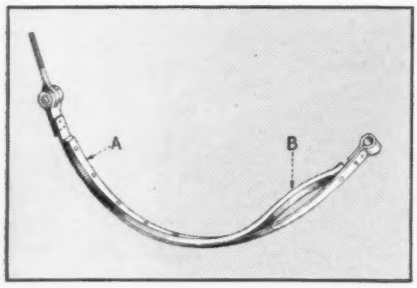
You can get the new Accotex Cots *now*. Your Armstrong representative will be glad to give you samples, prices, and complete information. Or write direct to Armstrong Cork Co., Textile Products Department, 8309 Arch Street, Lancaster, Pennsylvania.

ARMSTRONG'S ACCOTEX COTS

CORK COTS • ACCOTEX APRONS

KINKS & SHORT-CUTS

(Continud from page 172)



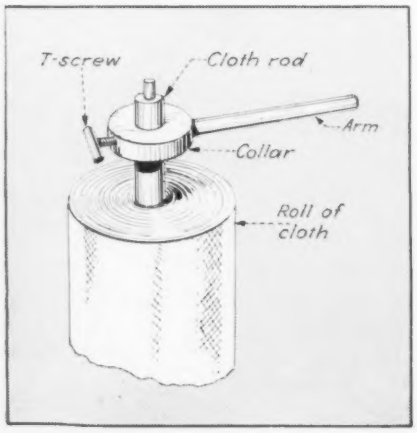
Brake-lining surplus shown should about equal arc of drum.

has a tendency to drag and grip. I have discovered a very simple method that requires no measuring and permits the band to fit perfectly.

When drilling or punching rivet holes, measure off the rivet holes slightly further than appearances indicate the hole should be. When a rivet is placed, the band will show an outward surplus of lining as shown at *B*. After riveting is completed, merely press these spots inward toward the band, and they will appear flattened out as at A. The relined band can be placed back onto loom and will not drag. *(K-197)*

Lever Is Useful When Removing Cloth Roll

Sometimes a cloth rod (or roller) becomes stuck in a roll of cloth and cannot be pulled out by hand. A collar which slips snugly over the end of the rod and is held in place by a thumb screw and has an arm extension welded to the side will help remove the most stubborn rod. *(K-203)*

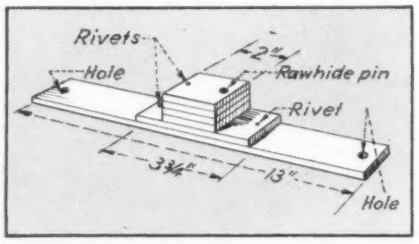


Special tool gives leverage in removing cloth roll.

Special Shuttle Check Better for Some Looms

The built-up shuttle check illustrated is used on some looms having the check in the box end and is better than the usual run of somewhat similar checks.

The long strap measures 13 in. by $1\frac{1}{4}$ in. wide and $\frac{1}{4}$ in. thick. A hole at each end is placed there to secure the check to the casting after the regular check is removed. The second strap is $3\frac{3}{4}$ in. long and $1\frac{1}{4}$ in. wide by $\frac{1}{4}$ in. thick and is riveted to the long strap as shown. The third piece is a built-up piece 2 in. long by $1\frac{1}{4}$ in. wide by $\frac{3}{4}$ in. thick. This smaller piece is riveted at one end indicated by the small rivet head, and at the other end by a piece of rawhide forced through a smaller-diameter hole running through all

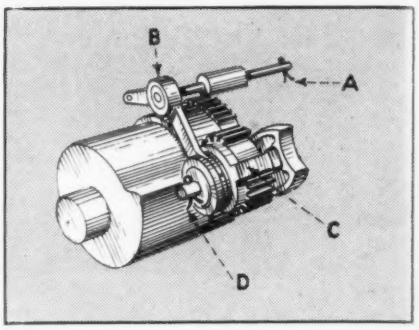


Built-up shuttle check has rawhide pin as a feature.

three sections of leather. This is indicated by the larger fastening shown. The reason for this rawhide pin is to prevent wear on the picker when the picker comes backward and strikes against the check. *(K-196)*

Pin Prevents Damage To Loom Box Motion

The addition of a cotter pin can prevent trouble on box motions, as shown in the accompanying sketch. When the original cotter pin A breaks



Cotter pin D acts as safety if cotter pin A fails.

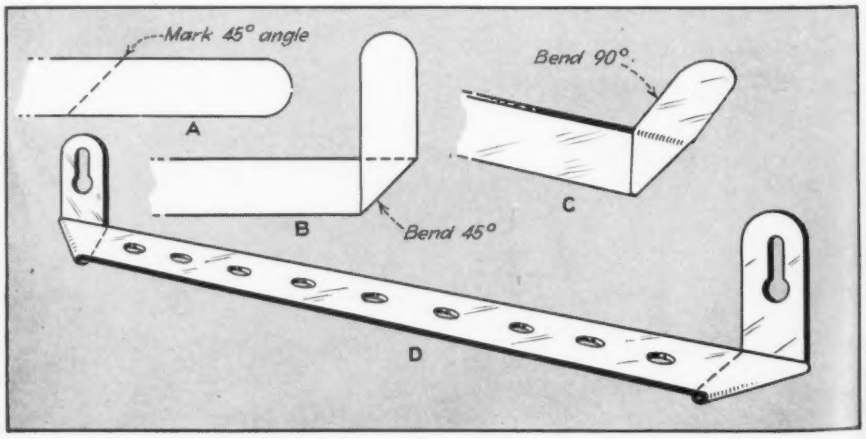
while loom is running, it sometimes causes the sliding tooth *C* to fly out and contact the box-motion drive gear. This, in turn, causes the box motion to hang up, and occasionally a smash results.

By inserting cotter pin *D* on the pinion shaft, this trouble is prevented. A fixer can drill a hole in the shaft and insert the cotter pin *D* in two or three minutes. This eventually saves time and work on his part and increases the overall production of his looms.

This cotter pin can be inserted on the one pinion shaft for a two-cell box motion and on the two pinion shafts on a four-cell box motion. *(K-194)*

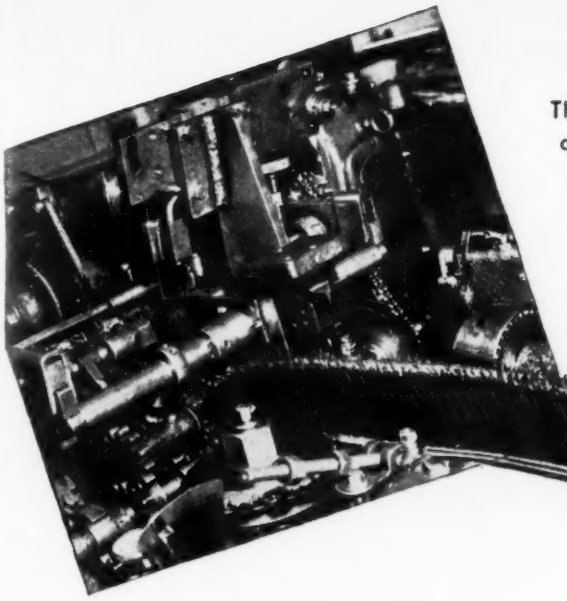
Simple Bracket Keeps Small Tools in Order

To keep screwdrivers and other small tools in order a few simple tool-holding brackets can be easily made as shown in the accompanying sketches. Use flat cold-rolled steel strip of $\frac{1}{8}$-in. thickness. Bend the ends over as shown in the three steps designated *A*, *B*, and *C*, and at *D*, drill the necessary holes for the tools and hanging screws.—*(K-9)*



Wall bracket for tools easily made in shop.

FULLERGRIPT BRUSH STRIPS
are made on a machine like this..

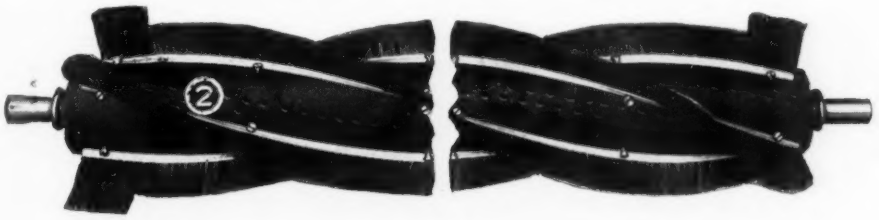


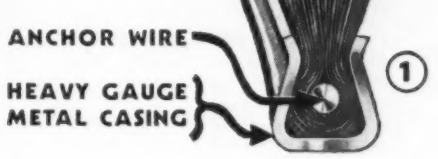
The brush material is centered over a ribbon of heavy-gauge metal and held in place by an anchoring wire and roll-formed into the finished shape as illustrated (1). Thus, as the bristles are doubled under the anchoring wire (hairpin style) and encased in metal under great pressure, permanency is assured.

FULLERGRIPT has a solid, continuous fill of material with no gaps or spaces between the bristles, resulting in much longer life and far better cleaning.

COTTON MILLS *can re-brush their* **FLAT CARDS** *with* **FULLERGRIPT BRUSH STRIPS** - which are shipped pre-formed to the correct degree of spiral (right or left hand). Your own maintenance men can easily mount them to the old brush roll.

Over 6000 Cotton Cards are equipped with our brush sets and are doing a better job of cleaning card clothing.





This is how your maintenance men renew your worn-out card brushes with FULLERGRIPT STRIPS Put worn card brush roll in lathe centers. Trim off old tufts of bristles with a sharp knife. (2) Sand-paper the roll. Apply two coats of black shellac. Drill screw holes on 8" centers and fasten the spiralled Fullergript Brush Strips with the special screws furnished with each set of strips.

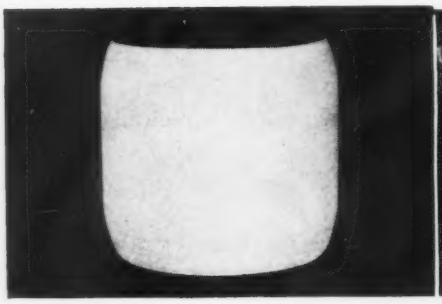
EVERY WEEK some *COTTON MILL* in the United States installs one or more sets of *FULLER FLAT CARD BRUSH STRIPS*

Manville Jerseys, Manville, R. I.

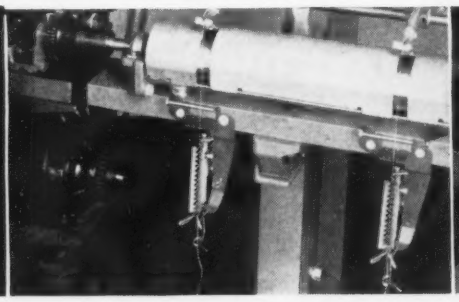
THE FULLER BRUSH COMPANY
INDUSTRIAL DIVISION, DEPT. 8C, 3594 MAIN ST., HARTFORD 2, CONN.

What Happens Here *Simplifies* Sizing and Coning of Nylon

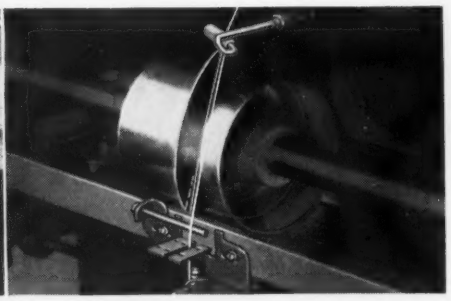
How the Universal System of Sizing and Coning Nylon Produces Quality Packages at Lowest Costs



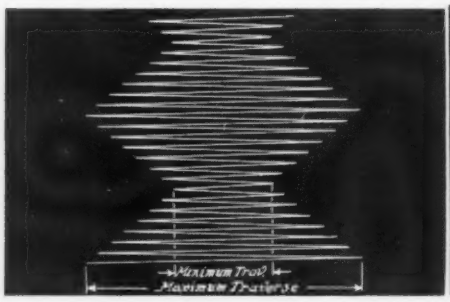
The Universal No. 250 Sizing Machine winds large-diameter tubes in which yarn is evenly and thinly distributed for uniform, rapid conditioning.



Tension is applied *before* sizing. Since the yarn travels thereafter almost in a straight line and yarn speed change is slight, there is little change in tension.

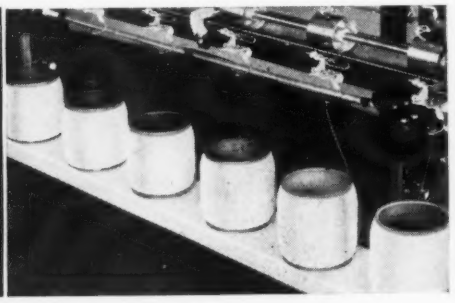


Percentage of size pick-up is easily and accurately maintained by controlling the amount of yarn contact and the speed of the roll.

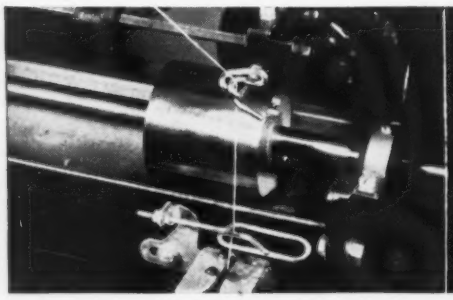


A special cam alternately lengthens and shortens the traverse to produce tapered selvedges, providing free delivery on the coning machine.

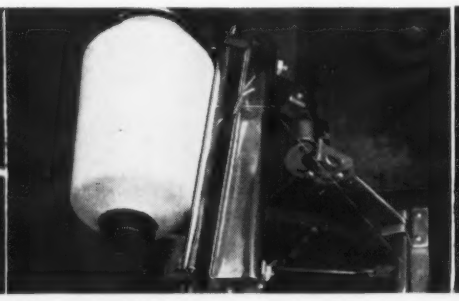
Use of four winds during each traverse limits yarn oscillation and reduces movement of reciprocating parts, thus minimizing wear.



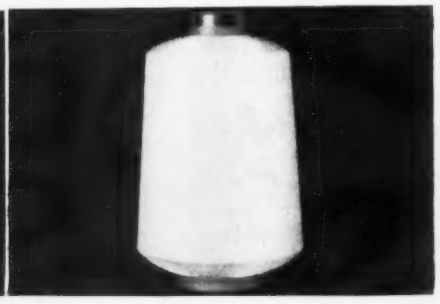
The Universal Sizing Tube is used as a direct supply to Universal No. 50 Coning Machine. No re-draw operation is necessary.



Easy adjustments obtain the desired amount of oil pick-up. Yarn travels in nearly a straight line, and contact points are few, to minimize tension.



The extremely simple Pineapple Coning attachment has the Roller Bail, kept true-running by the reinforced Roller Bail Holder.



The Universal Pineapple Cone is considered the ideal shape for a package supplying knitting machines with Nylon yarns.

Universal Winding Company

23-4-18

LEESONA

Reg. U. S. Pat. Off.

PROVIDENCE
BOSTON
PHILADELPHIA
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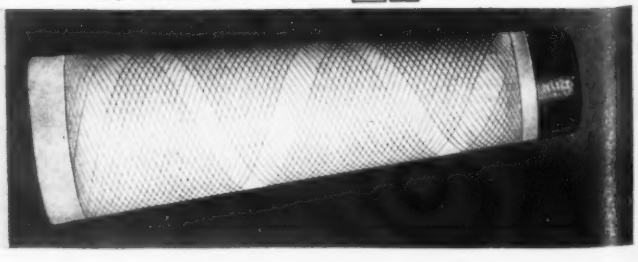
MORE THAN 90% OF ALL SYNTHETIC FILAMENT YARN ON CONES IS PRE-CISE-WOUND ON THE FLEXIBLE 50



Pete & Bill

LETTERS TO PETE & BILL are paid for when published, without regard to length. We use letters (not over 200 words) discussing material in this department or any other pertinent matter. Contributions of greater than specified length may be given consideration as articles. Suggestions for the Pete & Bill dialogue are also welcome and if used will be paid for. If these pages interest you, contribute something to them to interest others. Address PETE & BILL, Textile World, 330 West 42nd Street, New York 18, N. Y.

GOOD WORKING CONDITIONS

Do good working conditions in the mill, or is it wage rates, that do the most to retain textile workers on their jobs?

PETE, I SEE YOU FINALLY GOT APPROVAL OF THAT AIR-CONDITIONING UNIT YOU'VE WANTED. SEEMS TO ME THE COST IS HIGH, AND YOU ALREADY HAVE A GOOD HUMIDIFICATION SYSTEM.
IT'S A FUNNY THING, BILL BUT MY HUMIDIFICATION ONLY HELPS PRODUCTION. I WANT AIR-CONDITIONING TO HELP ME KEEP MY WORKERS ON THE JOB AS WELL.
1
CAN'T SEE HOW THAT IS GOING TO CUT MUCH ICE; THESE FOLKS LEAVE YOU WHENEVER THEY CAN GET MORE SOMEWHERE ELSE. THERE SEEMS TO BE NO REMEDY IN WARTIME, EVEN WITH MANPOWER CONTROLS.
BILL, I DON'T AGREE WITH YOU. SOME FIRMS HAVE NOT BEEN AS PROGRESSIVE AS OTHERS IN MAKING THE MILL A GOOD PLACE TO WORK IN, AND I BELIEVE THIS HAS AS MUCH TO DO WITH WORKERS LEAVING, AS WAGES.
2
NEXT THING I KNOW YOU'LL HAVE A NEW PAINT JOB, MOVING PICTURES, PIPED MUSIC, AND LOUNGE ROOMS FOR YOUR WORKERS. GIVE THEM EVERYTHING YOU CAN, AND THEY'LL STILL LEAVE FOR HIGHER PAY.
YOU MAY BE JOKING BILL, BUT SERIOUSLY, I WOULD LIKE TO GET MY DEPARTMENT OVERHAULED FOR WORKER COMFORT AS SOON AS POSSIBLE. I HAVE SOME OF THOSE THINGS IN MIND. JOE HERE WOULD LIKE TO DO SOME OF THESE THINGS, I BET.
3
FELLOWS, I DON'T KNOW WHAT WOULD BE BEST, BUT I DO WANT TO KEEP MY HELP IN SPITE OF WAR INDUSTRY. HOW CAN WE DO IT, READERS?
4

Letters From Readers

Don't Discriminate Against the Veteran!

"Using Handicapped War Veterans"
(Pete & Bill, Mar., 1944)

Dear Pete & Bill:

Discriminating against a man who has gone through "Hell and high water" for his country and me, just doesn't show any appreciation or patriotism.

I sincerely trust that business, regardless of how badly taxed, will not become so cold blooded after this war that every maimed or semi-invalid veteran will be tossed out, and only the more physically fit that can produce most efficiently will be kept working.

The rehabilitation movement will do its part; but we can and may be compelled to be prepared to utilize these men in a satisfactory, earn-a-living basis, which will require and demand study, patience, and even some sacrifice to cope with the problem, pay or not pay.

Bill, play your hand the right way, and help these less fortunate ones to win, open-handed and above aboard. You can if you will. Won't you? (PB 173)

Back to School for School-Age Employees

Dear Pete & Bill:

You two, and your side-kick Joe, should call a meeting to urge that the high school help you've hired this summer should give up their jobs in the mill and go back to school. They did a swell job for industry, but their education is now the important thing. Chances are a lot of the older ones will want to stay right on in the mill and the government's "Back-to-School" program should be brought to their attention. If you want to keep them in touch with the mill, give them a chance at afternoon and Saturday work. But they shouldn't miss out on their education. (PB 180)

Would Not Import Overseers

"Picking a New Supervisor"
(Pete & Bill, June, 1944)

Dear Pete & Bill:

Nothing is more conducive to killing individual incentive, and arousing just resentment among mill workers than the importation of overseers and second hands.

Management is indeed shortsighted which attempts to justify such action in the belief that "a new broom sweeps clean." Not even a superman can swing a room single-handed and, no matter how brilliant his qualifications, the outsider comes into a department with a couple of strikes on him so far as natural good will from the operatives is concerned.

To get maximum efficiency from any room or department cooperation

MEMORIES OF OLD MAN CARELESSNESS—*By Martha B. Pittenger*

No. 20 Remember?

Walt was the kind of a lad that heeded his mother's warning to be careful as he left home each morning for school. Twenty years later, Walt was the same type of young man. . . . he was mindful of the boss's warning to be careful about his work. That is until I edged in on him.

For weeks I had been watching him oil the picker machine. He was always mighty particular to raise the lids on the oil cups with the spout of the oil can. Then I noticed that one of the cups was loose. Walt made several attempts to lift the lid with a spout. Each time it would turn around, leaving the lid upside down. Walt was getting peeved, and I was getting pleased so I told him to just go ahead—save time, hold the cup still with his right hand, and pour in the oil with his left hand.

He was doing this all right, until someone came up back of him, which caused him to take his eyes off of what he was doing for a split-second. That was time enough for me to see the accident happen.

Walt had moved his fingers, slightly, and the index finger got caught between two gears, which mashed the finger off down to the bone. The plant was short of oilers, but I didn't mind seeing Walt go about for seven weeks with his finger bandaged.

But I'm rather afraid that I do mind that Walt will now remember the age-old advice—remember to be careful. And at the same time turning a cold shoulder to me.

of all must obtain. This requires the best effort of every operator, and it simply isn't human nature for a man to do the best possible job when he has the foreknowledge that the substantial promotion is unlikely to be filled from the ranks.

To management belongs the right of appointing the new boss but, in a spirit of fairness, and with a view to the general benefit of all, let's pick the man in the mill whose record of production accomplishment, and proven ability to handle men, has rightly earned him the job. (PB 170)

Foreman Must Supply Incentives

Production and Hours Worked
(Pete & Bill, Dec. 1943)

Dear Pete & Bill;

It is true that people working now do not seem to have enough personal interest in production to care whether or not their machine or effort warrants the increase in cost of a 48-hour week in comparison to a 40-hour week.

It is the job of the management to equip its supervisors with the knowledge of how the worker is to be shown his part in the war.

Many an employee has done much better after being shown in writing even though he does not understand the minute details of what it is all about. (PB120)

A Motor Maintenance Handbook

CONTROL OF ELECTRIC MOTORS; by P. B. Howard; John Wiley & Sons, Inc., 440 Fourth Avenue, New York; 479 pages; second edition; $5.00

Textile engineers and maintenance men will find contained in this book helpful information covering the characteristics and control of electric motors, variable voltage controls, single-phase motor control, synchronous motor control, wiring diagrams, etc.

Cancelling War Contracts

GUIDE FOR SETTLING CANCELLED WAR CONTRACTS; by J. J. Carroll; Cope, Inc., Cleveland, Ohio; $2.50.

The author presents a complete plan, with all necessary forms and instructions for using, based on his successful experience in supervising the settlement of claims resulting from $18,000,000 of cancelled contracts. Under the plan described, these claims were settled in full in from one to six months. The Guide has been created for the thousands of contractors who will be faced with cancellations.

Other Publications

WEAR—A DISCUSSION OF THE MECHANISM OF WEAR PHENOMENA AND INFLUENCING FACTORS; by D. Landau; The Nitralloy Corp., 230 Park Ave., New York 17; 46 pages.

SYMPOSIUM ON THE IDENTIFICATION OF WATER-FORMED DEPOSITS, SCALES, AND CORROSION PRODUCTS BY PHYSICO-CHEMICAL METHODS; American Society for Testing Materials, 260 So. Broad Street, Philadelphia 2; 44 pages; 65¢.

SYMPOSIUM ON THE APPLICATIONS OF SYNTHETIC RUBBERS; American Society of Testing Materials, 260 So. Broad St., Philadelphia 2; 140 pages; $1.50.

HOW TO MAINTAIN ELECTRICAL EQUIPMENT IN INDUSTRY; General Electric Co., Schenectady, N. Y.; $1.75.

A POSTWAR FEDERAL TAX PLAN FOR HIGH EMPLOYMENT; Committee for Economic Development, 285 Madison Ave., New York 17; 47 pages.

SPOTS STOP . . . Costs Drop

SUN LUBRICANTS

end damage to Nylon . . . reduce maintenance on loom bearings

Parachutes have attained great importance as military weapons in the present war. Chutes for landing cargo . . . for bombing . . . and for flares—all have an essential function to perform, and their need becomes ever-increasing.

Splattering and spotting of nylon were difficulties encountered by one mill, weaving parachute cloth. Approximately 100 looms were in operation . . . oil used did not stay on bearings and extra maintenance was required.

Losses of time and material resulted . . . production slowed . . . costs soared, until a switch was made to Sun Lubricants on the friction arms and all plain bearings.

Since adopting Sun Lubricants, almost four years ago, they have experienced no difficulties and bearings are adequately lubricated at all times. Splattering on the goods has been entirely eliminated . . . maintenance costs reduced and man-power conserved.

This is another case history of how Sun Engineers and Sun Lubricants are helping textile mills solve their lubrication problems and cut maintenance. The new Sun lubrication manual, "How to Get the Most Out of Lubricants," contains a lot of useful information. Write for a free copy.

SUN OIL COMPANY • Philadelphia 3, Pa.

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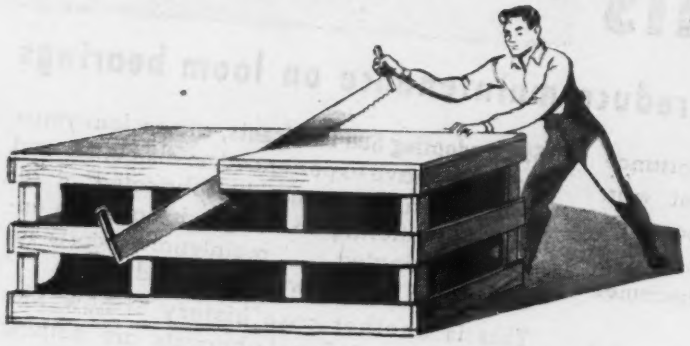

divide bulky shipments

into smaller units

THE handling, loading, and unloading of AIR EXPRESS shipments is a speedy operation. Crews are well-trained and skillful. They know and appreciate the importance of making connections, quick delivery. That is why a big bulky shipment that *could* have been broken into smaller units is a disservice to shipper and receiver alike. It simply cannot be handled with the same speed given to ordinary shipments. So to expedite your own shipments be sure they're made up in easily-handled units whenever possible.

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Representing the **AIRLINES** of the United States

Round Table

FOR EXCHANGE OF IDEAS

With meetings of operating executives curtailed, there is need of a meeting place where mill men can discuss problems among themselves. The Round Table is designed to supply this need. It is open to all readers for discussion of subjects relating to mill management and operation. Bring your problems to the Round Table. Give other mill men the benefit of your experience, and get their ideas in return. Names of contributors to the Round Table will be held confidential if so requested. Sign contributions with your real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table, Textile World, 330 West 42nd St., New York 18, N. Y.

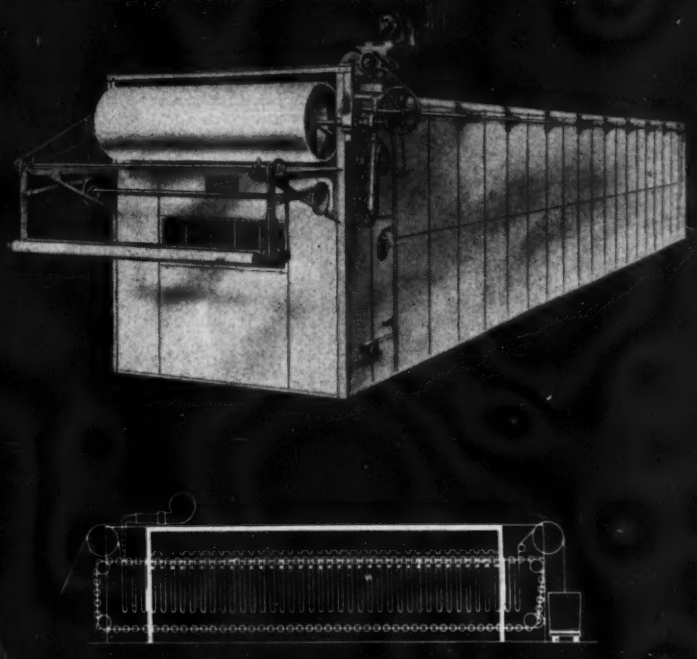
Baling And Sampling Methods Need Correction

Custom and habit often result in activities which may be quite irrational. For generations a prospective buyer of a bale of cotton seems to have enjoyed the God-given privilege to mutilate the covering of the bale in order to draw a sample, the sample becoming the absolute property of the sampler. Do buyers of other agricultural commodities have the right to rip and slash containers and to confiscate "samples"? Mr. Mitchem uses far too mild language in condemning the atrocities committed in the name of cotton sampling.

In proposing remedies Mr. Mitchem overlooks several important points. As to possibilities of re-using bagging and ties, he is entirely too optimistic. Under normal trade conditions, Texas exports about 90% of her total cotton crop. It seems rather doubtful that it would be either practical or economical to require the return of

Improved Drying of Spun Rayon and Rayon Fabrics with the

PROCTOR LOOP DRYER

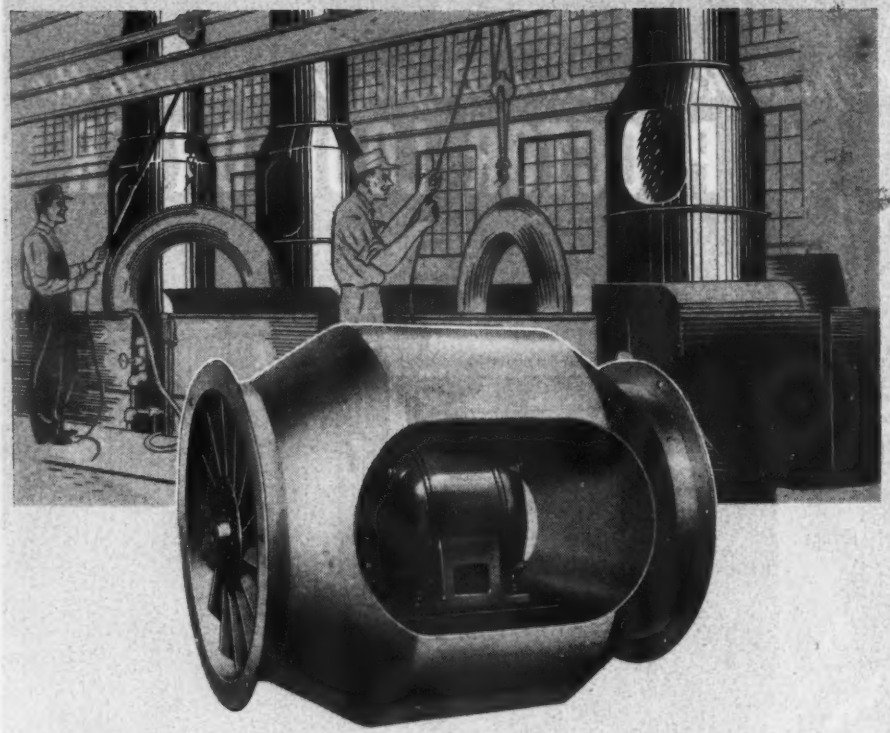


For the correct drying of spun rayons and rayon fabrics there is no machine better suited than the Proctor Loop Dryer. This machine is carefully engineered for the drying of piece goods. The cross section above gives an idea of how this machine works. As the cloth enters the dryer it is formed into loops over conveyor girts. Heated air, at high velocity, is then directed down into each loop. Material is thoroughly and uniformly dried, automatically. The careful control, which is necessary to the correct drying of rayon fabrics, is possible with this machine.

Sliding baffles regulate the air circulation. An exterior adjustment makes it possible for the operator to see the exact amount of air circulation taking place inside the machine. An improved lighting arrangement at the feed end enables the operators to observe the travel of goods through the dryer. If you are engaged in the manufacture of spun rayon, rayon fabrics—or for that matter—any kind of piece goods—it will pay you to carefully investigate the advantages of the Proctor Loop Dryer.

manufactured by
PROCTOR & SCHWARTZ, Inc
PHILADELPHIA, PA.

PROCTOR
TEXTILE DRYERS



AIR SANITATION

solved with

DeBOTHEZAT BIFURCATORS

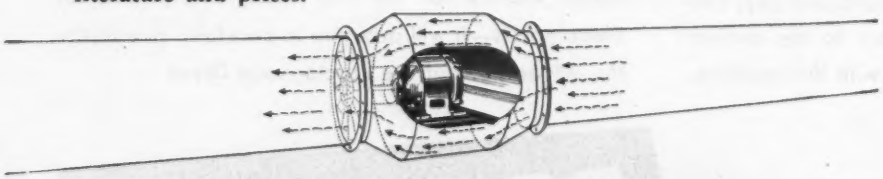
This "Axial-Flow" pressure fan removes dust and dirt from air; carries off air borne bacteria; removes odors and hazardous gases from air. A definite solution to many problems of employees' health protection.

Installation Is Easy

Installation of the Bifurcator is simple. It is readily installed in the present duct, just like a section of duct work. Operates equally well in any position — vertical through horizontal. No elbow bends or supporting platforms are needed.

How a Bifurcator Ventilator Operates

This different type of ventilating unit is sensibly designed and soundly engineered. The motor is readily accessible and is isolated from the fumes. *Air stream* is *by-passed* AROUND motor chamber *through twin passages,* which converge into the duct at both ends of the Bifurcator. The fan's non-overloading characteristic protects against costly motor failure. Available in a wide range of sizes and air capacities. Write for descriptive literature and prices.



DeBothezat Bifurcators

DeBOTHEZAT FAN DIVISION OF AMERICAN MACHINE AND METALS, INC.
EAST MOLINE, ILLINOIS

the bagging and ties on cotton sold abroad.

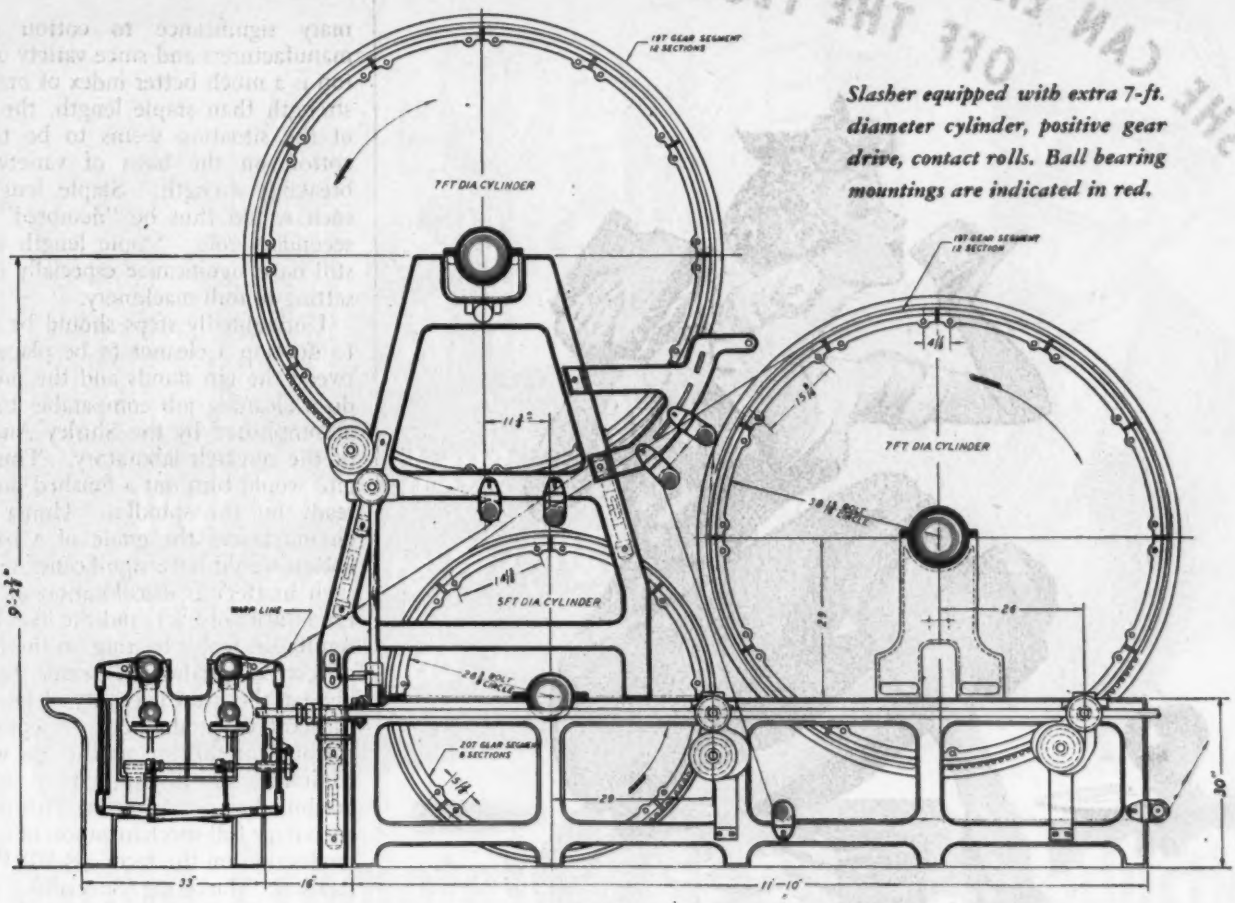
The proposal of an expert classer at each gin is most impractical. The average volume per gin in Texas is about 900 bales. Either the classer would receive a starvation salary for his services or his remuneration would be a staggering load on cotton growers. Experience in Texas has demonstrated the practicability of the ginner drawing a sample from the press box during the ginning process. These samples can then be assembled the following day at a central point from a considerable number of gins. In this way one classer may serve a dozen gins or more.

The suggestion of an attached envelope with a 7-pound sample borders on the fantastic. The chances are that after two or three "samplings" the sample envelope would be empty.

But a further observation must be made. Grade and staple length have neither the validity nor the quality-revealing characteristics assumed in the traditions of the cotton trade. "Grade and staple length alone do not adequately indicate spinning utility. Recent spinning tests show that the staple length in a given variety varied as much as $\frac{3}{32}$ inch with no significant difference in the breaking strength of the yarn. Spinning tests show that a given variety for a given year produces yarns of consistent strength regardless of the place grown. Yarns spun from different varieties but having the same staple length varied from 107 to 77 pounds in breaking strength. A comparison of the breaking strength of yarns of the best Texas grown cotton with several of the best southeastern grown cottons shows the Texas cottons to be slightly stronger, even though they are somewhat shorter." (Bulletin 624, Gearing Texas Cotton to War Needs. Texas Agricultural Experiment Station. p. 3. See also pp. 6-14.)

Experimental work with the Shirley Analyzer challenges grading of cotton as a means of evaluating quality. Samples of hand-picked, hand-snapped, and machine-harvested cotton, differing by several grades, after being run through the Shirley Analyzer emerge as snow-white cleaned cotton of a quality and appearance defying the eye to detect any differences in spite of differences in harvesting methods and in grades of the gin samples.

Perhaps the most promising way of atoning for the sins of the past in the sampling and grading of cotton is to scrap out-worn traditional methods and chart a new course guided by recent research revelations. Since breaking strength of yarns is of pri-



Slasher equipped with extra 7-ft. diameter cylinder, positive gear drive, contact rolls. Ball bearing mountings are indicated in red.

A MODERN SLASHER

The EXTRA CYLINDER increases drying surface, speeding drying. POSITIVE GEAR DRIVE turns drying cylinders without strain on the yarn, maintaining elasticity and improving weaving efficiency. CONTACT ROLLS provide maximum wrap of the yarn around the drying cylinders.

BALL BEARING MOUNTINGS on cylinder shafts and contact rolls provide smoother operation, and insure longer slasher life.

A modern slasher assembly similar to this one increases production and frequently reduces the number of slashers needed. It can be built in your slasher room, using much equipment you already have, which reduces the cost. We will be glad to give you estimates, without obligation. Write or telephone for further information.

WEST POINT FOUNDRY & MACHINE CO.

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AFTER *SPEEDI-DRI* HAS DONE ITS WORK!

SO EFFICIENT is SPEEDI-DRI, oil and grease absorbent, that it's literally true to say that your employees can eat off a Speedi-Dried floor. Think what SPEEDI-DRI can do in your plant: Increase plant cleanliness—SPEEDI-DRI absorbs all oil and grease, even old deposits. Lower accident records—SPEEDI-DRI is anti-skid. Check fire—SPEEDI-DRI will not readily burn even when oil-soaked. Save cleaning costs and production time—SPEEDI-DRI is spread by hand and swept up with a brush while work goes on. It does away with all expensive cleaning machinery, caustics and solvents.

SPEEDI-DRI is more effective and less expensive than any of the old methods of removing oil and grease. Get the facts—write for literature and a FREE SAMPLE.

SUPPLIERS: East—Refiners Lubricating Co., New York 1, New York.
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SPEEDI-DRI
OIL AND GREASE ABSORBENT

mary significance to cotton goods manufacturers and since variety of cotton is a much better index of breaking strength than staple length, the logic of the situation seems to be to sell cotton on the basis of variety and breaking strength. Staple length as such would thus be "demoted" to a secondary role. Staple length would still have significance especially in the setting of mill machinery.

Undoubtedly steps should be taken to develop a cleaner to be placed between the gin stands and the press to do a cleaning job comparable to that accomplished by the Shirley Analyzer of the research laboratory. Thus the gins would turn out a finished product ready for the spindles. Under such circumstances the grade of a bale of cotton would have significance only in such matters as discoloration of fiber, immaturity of fiber, and the like. Every significant factor bearing on the future of cotton production seems to emphasize the utter necessity of lowering the cost of production. A complete cleaning of the lint at the gin would eliminate all discrimination against machine-harvested cotton. This should encourage full mechanization of cotton production on the farm. *(R-80)* W. E. Paulson, Marketing Specialist, Texas Agricultural Experiment Sta., A. & M. College of Texas.

Believes Grex System Will Be Too Confusing

In reading over the articles and comments on the Grex system of yarn numbering there seem to be a number of advantages in its use:

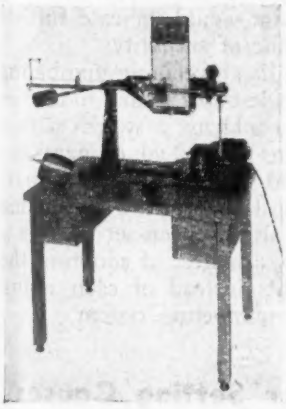
1. That comparisons can be made between rovings, yarns, and fabrics because of the direct number of yarn. (Keeping a fixed length and numbering the yarn according to unit weight of that length).

2. For cost calculations and for conversions of fabrics from one construction to another, the system is admirable.

3. Also, the system gives all classes of textiles a meeting ground.

It is admitted that we need a universal system and in order to get one adopted it must not present too radical a change from existing systems. Therefore, it seems advisable to look for points of similarity in all systems and then set up a common system requiring a minimum of adjustment and which will still have the chief advantage of the Grex system—numbering in direct proportion to the increase in weight of a given length. To me,

Testing Promotes and Protects Production



Model IP 2. Exclusive Incline-plane Tester. Single hair to 2,000 grams.

The needs of the Textile Industry for physical testing equipment have never been greater than under the stress of war conditions. The urgent need for production combining high output and high quality, has highlighted the importance of an Adequate Testing Routine to facilitate purchasing, speed research, promote production and prove quality. The 60 models of *Scott Testers span the field of textile testing requirements, while our engineering service assists in integrating testing procedures into your operating set-up for maximum effectiveness.

Model J 2. For tensile testing of skein or single end. Also burst test.

Standard of **SCOTT TESTERS** *the World*

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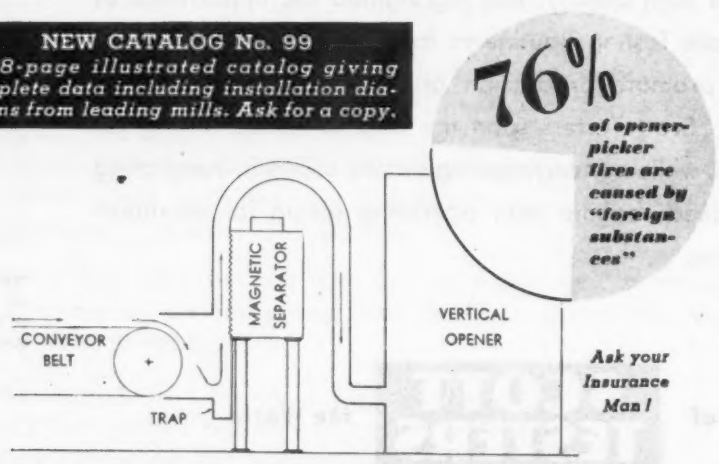
Manufacturers of more than 60 models of testing machines for every phase of textile, rubber, wire, leather, paper and similar tests including Tensile, Hysteresis, Flexing, Compression-cutting, Plasticity, State-of-Cure, Adhesion, Burst, etc.

Guaranteed TO START A FIRE ...in opening or picking!

• The above picture shows pieces of bale ties and tie buckles removed from cotton in a large mill by a Dings High Intensity Magnet. Records show that nearly 76% of opener-picker fires are caused by "foreign substances." The automatic protection of Dings Electromagnets reduced the fire incidence in one mill from nearly one per week to only five in two years! . . . and three of the latter were caused by chokes. It will pay you well to install Dings Magnets—they are available now. Write today for details.

NEW CATALOG No. 99
An 8-page illustrated catalog giving complete data including installation diagrams from leading mills. Ask for a copy.



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World's Largest Exclusive Builder of Magnetic Equipment

Dings MAGNETIC SEPARATION HIGH INTENSITY

Established 1899 Offices in Principal Centers

the Typp system is closest to a universal system for the woolen, cotton, worsted, and linen industries and could be easily adopted except that it does not have the chief attribute of the Grex system which is an increase in yarn number with weight per unit length.

Adoption of the Grex system, except for the technician, could be disrupting to the cotton textile industry and probably the woolen, worsted, and linen industry because the base of their numbering system is yard and pound. By figuring with the Grex system one must think in grams instead of pounds, meters instead of yard and grams per unit length instead of yarn number. Then when getting to the market it is necessary to go back to thinking in yards and pounds. This results in confusion and still more confusion will arise when new measurements are used to designate package weights and sizes in the mill—or front roll speeds, production, etc.

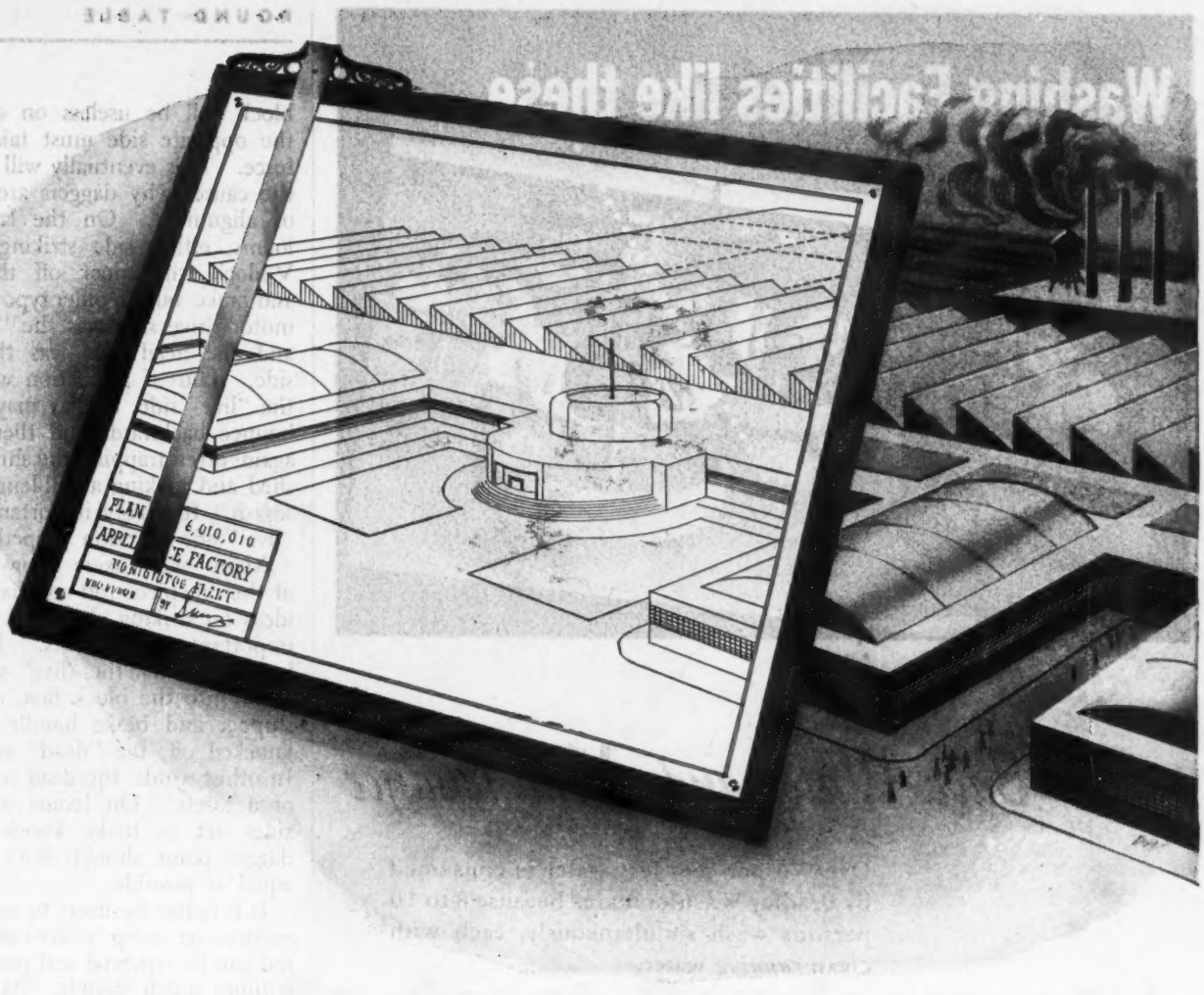
It would hardly seem practical for any mill to go to the expense of revising all their mill records and data to the Grex or go to the trouble of converting old data to the new system for comparison. Everything would have to start from scratch with the adoption of the system, with resulting expense and confusion. This difficulty and confusion would increase further down the line of authority.

While a direct weighing numbering system is desirable, the industries mentioned could use a system with a base of grains per 100 yd. or grains per 1000 yd. and have less trouble in making the transition. Such a numbering system has already been set up. It is then merely a matter of adopting the grain weights instead of each industries "pet" numbering system.

Improper Setting Causes Protector-Rod Troubles

Round Table inquiry *R-74* in regard to protector rods presents an interesting subject. It has been this writer's experience that the one-piece protector rod is best suited for slow or fast speeds and that speed has nothing to do with rod performance. The actual reason for rods bending out of proper alignment can usually be traced to unequal dagger heighth striking into the knock-off levers.

If daggers strike high in the V-block, they often bounce down, clear below the block, and the loom keeps on running. Occasionally, one dagger point will keep nipping one block, gradually chewing the metal off. In time, the



Tomorrow's Production Successes

are on Engineers' Drawing Boards Today

The successful textile mills of the future will use Modern Air Conditioning to control humidity, temperature, air cleanliness, ventilation and circulation.

The industry early learned the value of correct humidity in controlling product quality. Thus it pioneered in the use of industrial air conditioning.

Today, your competitors are planning a better product at lower cost and the higher employee morale and efficiency that will improve their competitive position. Undoubtedly your plans, too, include Modern Air Conditioning in a place of foremost importance.

Modern Air Conditioning means Westinghouse—and its years of pioneering research and engineering experience.

For essential war uses in factories, hospitals, airports, military bases, etc., Westinghouse Air Conditioning and Industrial Refrigeration Equipment is available today.

For executives, architects and engineers now planning postwar building and modernizing, dependable data and competent application engineering assistance are ready.

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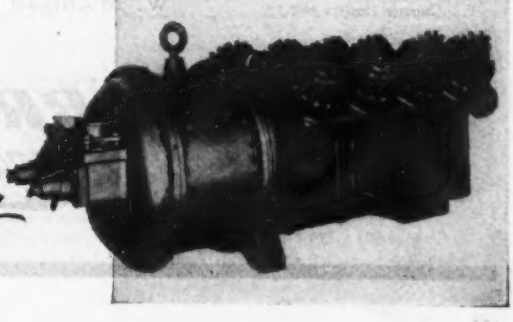
HERMETICALLY-SEALED FOR DEPENDABILITY

Westinghouse pioneered the Hermetically-Sealed Compressor. Hermetically-sealed means light weight • small size • low maintenance and operating costs • high efficiency • long life.



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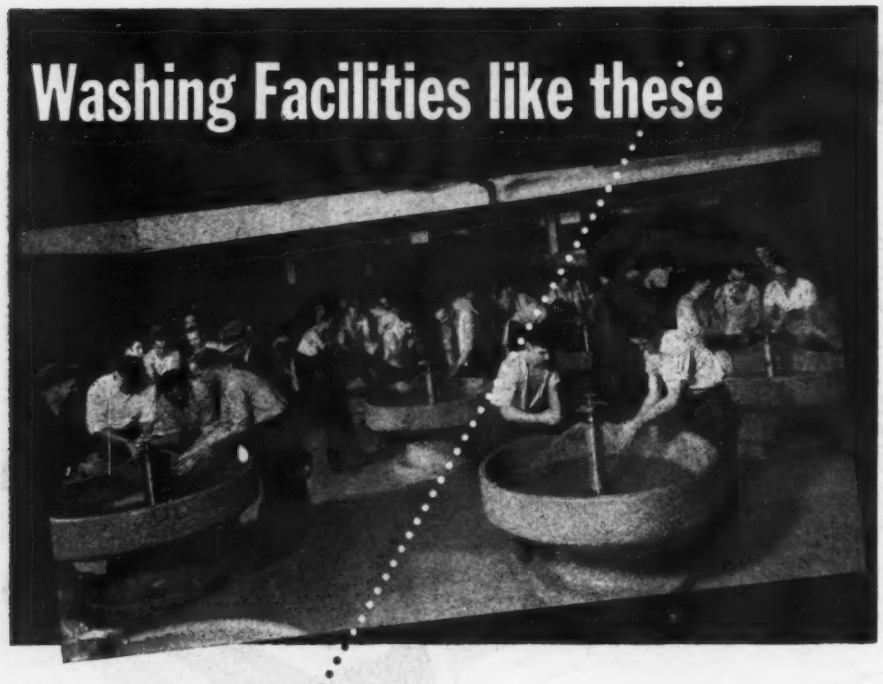

Save Water and Maintenance

Over 70 per cent less water is consumed by Bradley Washfountains because 8 to 10 persons wash simultaneously, each with clean *running* water.

Therefore three piping connections—one each for hot and cold water, and one for the drain—take the place of 24 to 30 connections needed for "single-person" wash basins to serve the same number of persons. To the saving in installation and maintenance costs can be added the elimination of all individual faucets.

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The need for adequate, modern and sanitary washroom facilities has been recognized by leaders in the textile industry. Bradley Washfountains are the choice of such leaders—good reason for getting all the data now for replacement or for new plants or extensions you are contemplating. Write for complete Catalog 4308. BRADLEY WASHFOUNTAIN CO., 2325 W. Michigan Street, Milwaukee 1, Wis.

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block will be useless on a bang-off; the opposite side must take the full force. This eventually will be one of the causes why daggers are bent out of alignment. On the later model looms, either side striking into the V-block will knock off the shipper and brake; but on older type looms, the motor drive side was the "live" side, and the head side was the "dead" side. Thus if protection was lost on the "live" side, the lay may bang off, bounce backwards and then start up again, often trapping the shuttle in the shed and making a full-length shuttle smash. It is very important that the "live" side function properly.

Many older fixers know the value of the one-piece rod and have definite ideas on striking clearances and other important adjustments. Experience has shown that the "live" side should strike into the block first, and as the shipper and brake handle are being knocked off, the "dead" side strikes. In other words, the dead side is more of a safety. On looms where both sides act as brake knock-offs, each dagger point should strike as nearly equal as possible.

It is better for fixers to examine this motion on warp weave-outs when a rod can be removed and properly bent without much trouble. At this same time, blocks can be removed and replaced if necessary. On some looms, knock-off levers (blocks) are easily removed. On other loom types, the brake rod stands must be loosened and moved out of place in order to allow removal of the blocks. If cloth is being woven full widths of reed space, removing these blocks requires considerable time.

If rods are removed for straightening, make sure first that the loom will bang off when boxes are empty. A light movement of lay forward should knock off. If knock-off fails, inspect dagger length and block movement. The block may be sticking. Again, the lever end may not be bent in proper shape to strike the brake tumbler at the precise time to knock off. An inspection will show this condition. Many fixers prefer the "live" side dagger to be $\frac{1}{8}$ to $\frac{1}{4}$ in. longer than the "dead" side.

I wonder how many fixers realize that before measuring dagger length when the loom fails to stop on a bang off, they should inspect the length of crank arms? One crank arm may be a trifle shorter, throwing the fixer off his checking.

Of course, protector rod daggers get out of adjustment between warp mounts, and are often not detected

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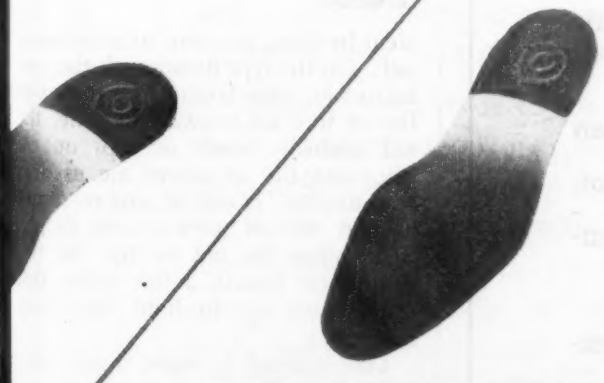

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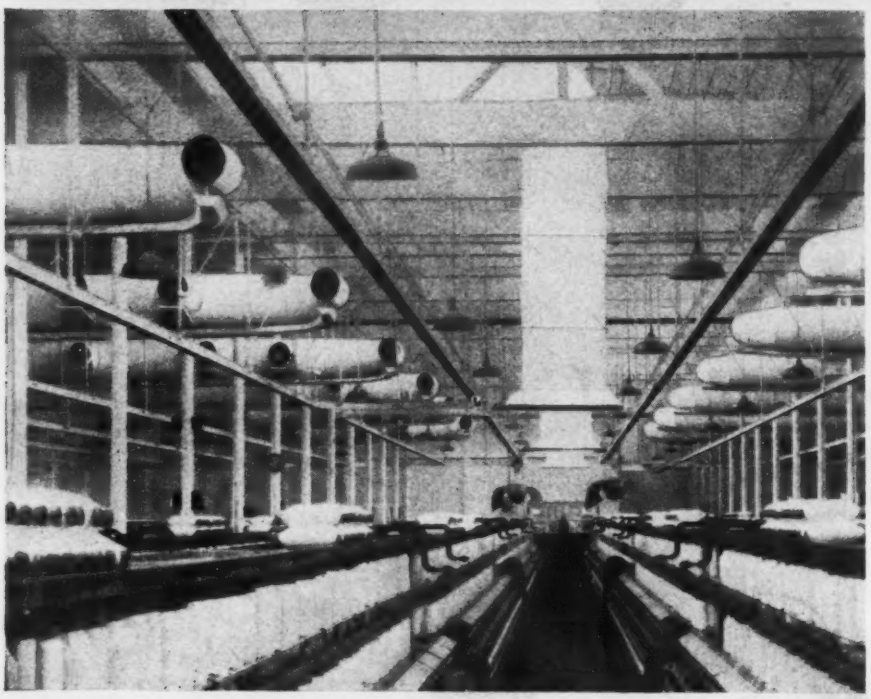
for the
TEXTILE INDUSTRY



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The Bahnson Humiduct principle can supply conditioned air in any form—hot, cold, humid, dry, cleaned—or in any combination—automatically controlled.

Bahnson Engineers, experienced in textiles, are available for servicing postwar planning—or priority installations.

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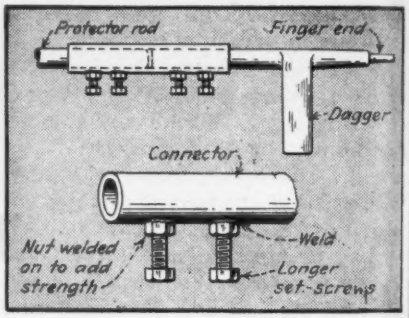
until a smash occurs. If a bent rod is at fault, it is a simple matter for one fixer to straighten out the dagger alignment, using the pipe method shown in a former issue of TEXTILE WORLD. Using this method avoids calling a second fixer for help, and also avoids the need for removing rod fingers. The pipe is placed beneath the low dagger, and the fixer bends down on the high dagger.

One of the main reasons for a two- or three-piece protector rod, is not for ease of adjustment, but for replacement parts. Some rods have one connector, whereas, other types have two connectors, one on each side inside the daggers and end stands. Thus, if one dagger is gradually chewed down on the point, it can be removed by unfastening the connector near it, and allow replacement. Or an end can be replaced if the rod finger and breaks.

Some connectors are keyed onto the protector rod, and if a bent or twisted rod is encountered, the dagger ends must be bent back into proper align-



Welding on nuts salvages protector rod connectors.

ment by force, the same as a one-piece rod. On the type mentioned, the connectors are only fastened by means of two or four set screws. In time, the rod gradually bends or slips out of place and the set screws are used as adjustments. It may be, and no doubt is, that the set screws, even though tight, allow the rod to slip. In this case, there remain a few tricks that some fixers use to hold rods from slipping.

One method to make a set screw hold is to drill a $\frac{1}{4}$-in. hole into the rod beneath each set screw so the screw feeds into the hole and is permanently tightened. The second method is to drill a $\frac{1}{8}$-in. hole completely through connector and rod and rivet the two firmly in place. The third is to key the connector in place. None of these methods may be suited, so we have a fourth method that the writer has found works out very satisfactory.

When connector set screws allow slippage, fixers will try to tighten up the screws too tight, and often strip

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Although today's stock is limited, certain standard mill forms of Monel are available, as are shafting and various fastenings. Pump parts and other castings may be obtained in both Nickel and Monel.

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The letter that accompanied the above photograph read: "Enclosed is a picture of the dryer you installed in London in 1933. I hope you will be able to recognize it."

Hitler's bombs did a thorough job of putting this "National" Dryer out of production . . . very personal evidence, to us, of the terrific waste that war creates. The few years this dryer was allowed to operate represented only a fraction of the "life span" for which it was designed and built. Under normal circumstances, it would still be demonstrating the soundness of "National" engineering and the profitable use of "National" equipment.

The need for postwar replacement of wrecked or worn-out drying machinery will give "National" the opportunity to introduce improvements in design and construction which are "marking time" for the duration. Meanwhile, inquiries concerning future deliveries of these newer "National" machines will receive prompt attention. Suitable priority, of course, will enable us to meet your needs, now.

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the screw threads, requiring a connector replacement. A better method is shown in the sketch.

Remove connector from rod. Weld a heavy-duty nut over the hole. To secure proper alignment if hole threads are still serviceable, place the nut on a longer set screw and run the set screw into the connector hole. Tighten the nut firmly. Braze the nut temporarily in place. On a four-hole connector, all four set screws can be worked on at once. Allow the braze to cool. Remove set screws and half finish the welding job. Cool once more. Now place graphite over the set screws and screw them into place. Braze the balance quickly. On cooling, the set screws can be removed without trouble as the graphite prevents freezing of the set screws into place. Once the connector is placed back on the loom, use hollow point set screws that will dig in and will permit plenty of pressure to be used in tightening, without danger of stripping the threads.

If connector hole threads are stripped, a slightly larger diameter set screw can be used. In this case, weld the nut over the hole and tap the hole out to fit the new set screw, running the tap on down through the nut. This is also a good trick in making use of those discarded connectors with stripped holes. *(R-81)*

●

Speeding Duck Production

(*Continued from page* 121)

both in the decrease of worker fatigue and in the improvement of quality.

The increasing employment of women on jobs formerly run entirely by men has not hurt us a great deal, even with its attending problems. In fact, in some cases we find the women more efficient than many men.

Although no special training program has as yet been employed, naturally more emphasis has been placed on training, since a much larger number of learners have had to be put on to replace skilled workers entering the armed services. One feature that should not be overlooked is that quite a few of the key workers are taking correspondence courses in textiles, part of the cost of which is paid by the mill.

Other intangible aids to our objectives include posters in the mill, bond drives, visits from returned service men, letters from men actually in the battle zones, movies, ceremonies attendant to the award to our plant of the Army-Navy "E," attendance reports, and so on.

★ *A Brilliant Record* of war-time operation is being established by the textile machinery whose builders were foresighted enough to assign Hyatt Roller Bearings wherever the going was tough. Figure what a help this is in supplying today's war-time fabrics – the greatest variety and volume ever demanded of America's mills.

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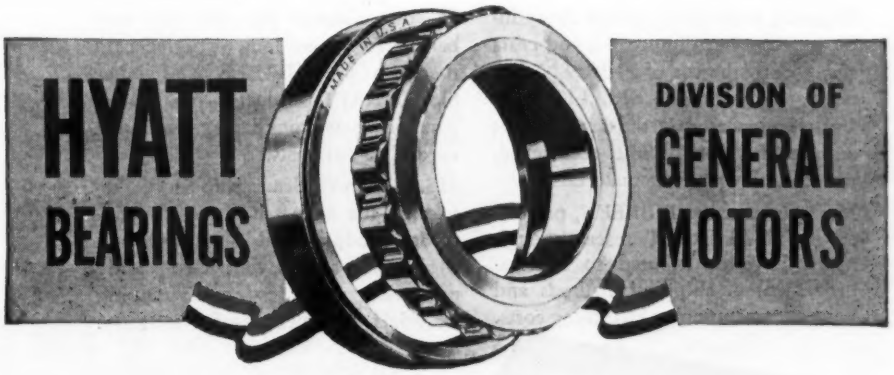

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is setting new records for toughness and weatherproof qualities!

War supplies to fighting fronts, wrapped in FIBREEN, are arriving in usable condition despite direct exposure to driving rain, snow, sleet, salt water, ice, tropical humidity — and rough handling!

The very same properties that made FIBREEN the preferred protection for peacetime shipments are the reasons why it is now an essential war need. When victory is won, FIBREEN will again be available for general use.

This Waterproof, Tear-Resistant, Fibre-Reenforced Wrapping Can Simplify Your Postwar Shipping

Shipping methods in almost every industry have been improved, and costs *reduced,* by the use of FIBREEN. For nearly 25 years The SISALKRAFT Co. has pioneered in the development and production of fibre-reenforced, waterproof wrapping materials.

Methods of using FIBREEN, perfected by SISALKRAFT research engineers, have contributed to the improvement of shipping methods and have cut wrapping and handling costs.

In your postwar planning you may benefit from our long experience in the uses of FIBREEN and other SISALKRAFT products — to protect your products from damage in transit — and to cut costs.

SISALKRAFT leadership is the result of the unmatched performance of its products and a research and engineering service that is constantly perfecting new, low-cost wrapping materials and methods for industry.

Let SISALKRAFT *help solve your wrapping and shipping problems. Our knowledge is at your service.*

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Questions and Answers

Preventing Rolled Ends on Rayon Warps

Technical Editor:

In January Textile World there appeared an item relative to the question of crossed threads between the loom beam and drop-wires in warps dressed by the old silk method. There is a similar condition pertaining more or less to rayon warps made from section beams on slashers equipped with hook reeds which turn out perfectly straight one-and-one leased warps. However, in the weave room, one can see rolled and twisted groups of threads all across the warps, struggling laboriously, it would seem, to get through the drop wires, despite the fact that the threads unwind off the beam in the same even sheet and uniform fashion in which they wind on the beam at the slasher. Could it be that the rolling and twisting into strands was produced while passing over the whip roll?

Does this condition interfere with the maximum of good weaving, and if so, to what extent would it pay to resort to the extra labor of combing the threads upwards to force them over the whiproll in the proper normal order in which they come off the beam? Or is it better to let well enough alone? (8974)

Crossed ends in a warp should not cause trouble so long as the ends are not actually rolled. Following are a few possible causes for this ailment and some hints which might help to run such warps.

Drop-wires should be placed as close to the harness as possible, but not to the extent that they bind against electrodes during shed formation. In other words, drop-wires should "walk" freely so that separation of ends caused by harness motion can be noticed back to the whiproll. This will help to separate ends before they reach drop-wires.

Whiproll and warp beam must be absolutely level; that is, parallel to each other. Whiproll must run true and move freely.

In slashing, the delivery roll is usually covered with muslin. This is the

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There's a happy day coming soon WHEN you can see this high speed Tricot Machine—the most advanced engineering achievement of its kind yet developed.

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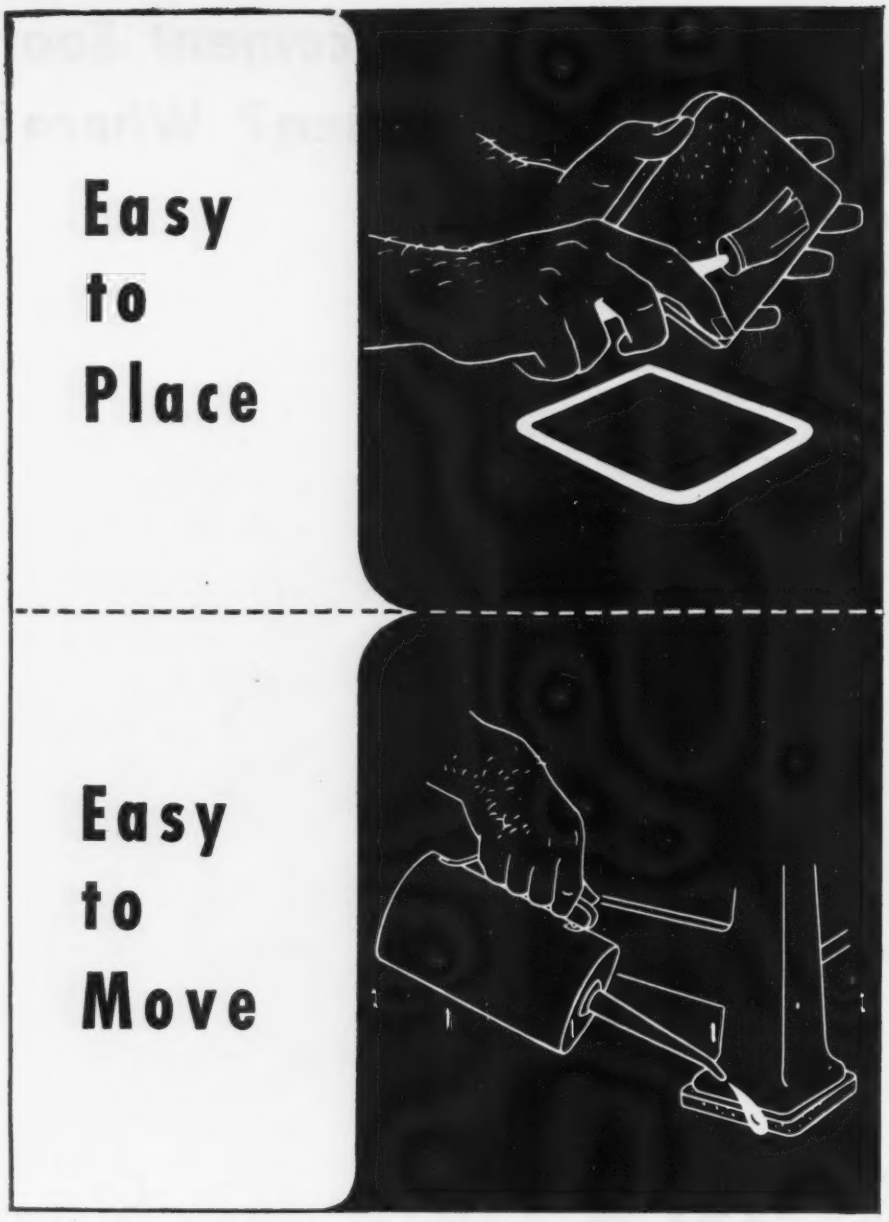

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roll around which the warp runs after having passed through a spacer or zig-zag comb and before the yarn is wound unto the loom beam. This cloth should be cut on the bias so that warp ends never run parallel to warp or filling ends of this muslin.

Spacer comb should not be placed too close to delivery roll as the spaces caused by comb dents may force ends to form groups. This will result in a slightly ridgey warp and cause ends on a beam to fall or roll into the grooves between these ridges. Be sure split rods are as centrally located to normal warp line as possible.

Section beam tension must be uniform on all beams. By this is meant that tension on first beam must be slightly less than on last beam, otherwise ends are stretched more because of the shorter length of yarn between section beam and pressure rolls, and caused by the much greater distance the ends have to travel from the rear beams.

Very little more tension is required to minimize slackening of these ends which might result in a possible rolling or overlapping while traveling through the quetsch. Any irregularity which takes place anywhere during slashing, as far as individual section beams are concerned, may cause creased or rolled ends despite the use of split rods and combs.

Of course, uneven tension in warping may be responsible for this trouble, more so, if section beams from different warping creels or machines are combined to form one set.

If such warps run anywhere near a normal efficiency, it is advisable "to let well enough alone." Where there is enough room between looms, it sometimes helps to raise the warp and eliminate the whip-roll, at the same time placing the warp as far back as possible.

This simple method is intended to give the ends all the possible chance to open up. Such a change will be found to be of greater benefit in more serious cases, rather than in only slightly affected warps.

Shaded Tweed Fabric

Technical Editor:

For sometime now we have been having trouble with our tweed fabric being shaded side-to-side. As a consequence we are sending you a full-width end of this fabric. We would appreciate it very much if you could give us information as to how to overcome this fault. You will note that on this end which we are sending you, the shaded side-to-side is caused by the

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Economy in performance is the first essential of Lunkenheimer valve design . . . every detail is carefully planned to insure tightness and long life with lowest possible outlay of time, labor and money for maintenance.

Glance at the chart immediately following. These startling figures show what leaky valves can waste . . . and conversely what good tight valves can save. Where Lunkenheimer valves are on the job and given ordinary care, these losses are held to a bare minimum.

Always helpful is the nation-wide Lunkenheimer distributor organization. There's one near you with complete facilities to serve you.

AREA OF LEAK	AIR		STEAM		WATER	
Diameter Inches	Number of cubic feet per month at 75 lb. pressure	Total cost of waste per month 11c per 1000 cubic feet	Pounds wasted per month at 160 lb. pressure	Total cost of waste per month 65c per 1000 lb.	Gallons wasted per month at 60 lb. pressure	Total cost of waste per month 16c per 1000 gallons
1/2"	13,468,000	$1,481.44	1,219,280	$792.53	1,524,100	$243.86
3/8"	7,558,500	831.44	684,290	444.79	855,360	136.86
1/4"	3,366,990	370.37	304,820	198.13	381,020	60.96
1/8"	824,570	90.70	74,650	48.52	93,310	14.93
1/16"	213,000	23.43	19,280	12.53	24,110	3.86
1/32"	52,910	5.82	4,790	3.11	5,990	.96

Enlarged copies of chart are available on request

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twill being steeper on one side than the other.

The construction of this fabric is as follows:

Wool content .....100% Virgin wool
Ends 1460
Picks 21
Reed width .....69½ in.
Loom weight .....17 oz.
Finished weight .....15 to 15½ oz.
(9000)

With reference to the black-and-white twill, made from 100% South American wool and which is shaded from side-to-side, the trouble is, in our opinion, in uneven fulling. This may be caused by the soap being applied unevenly or the soap being too warm on application. You will notice that the ticket side has two ends less than the other side, and on pulling the filling thread, they take a very oblique angle to the center of the cloth. This may be caused by the chain on the dryer being a few links longer than the opposite side. If the same trouble appears in all fabrics, it will be wise to check up on the dryer.

Preventing Tape from Curling

Technical Editor:

We are interested in weaving narrow cotton tapes up to ½-in. wide, flat and non-twistable. Can you provide us with the principles involved? We will use as warp 20/2 carded cotton and 12 picks or more of filling, depending on the number necessary to make the tape lie flat. We intended to use one end of reverse and one end regular warp-twist, but have found a sample which has the warp-twist all regular and it lies very flat. Enclosed is a sample of our tape. (8999)

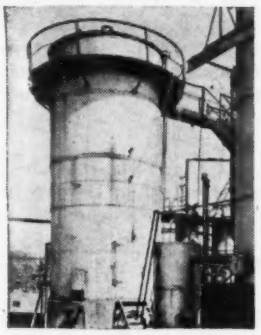
The 20/2 tape submitted has too much ply-twist. Reduce the twist in the 20/2 and obtain a balanced plyed yarn so when two ends are held up to form a U the yarn will not twist together. Use a balanced 20/2 and a filling with reverse twist (S) to produce the most economical take. Otherwise, use about 50% regular play and 50% reverse ply in warp. On your single warp tape use about 33⅓% reverse-spun warp and a reverse-spun filling.

The idea of using one end of Z and one of S-twist is practical, but it will be necessary for you to dye reverse yarn with a fugitive dye in order to identify the ends when they break in weaving. Perhaps it may be possible to set the twist in the present yarns by conditioning. Size your warp with a light starch size of 2 or 3%.

(*Continued on page 200*)

TELLURIUM LEAD DATA SHEET

SUBJECT: *Acid-Equipment Vibration*



Tellurium Lead resists vibration: In chemical handling equipment subject to vibration, the stresses resulting from the continuous, alternating movement may result in failure of the materials from which the equipment is made.

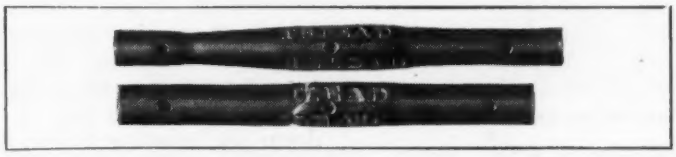
This breakdown may take the form of a crack in a tank lining or a leak in a heating coil or pipe line.

The service records of users whose statements are in our files show that in a number of instances Tellurium Lead sheet and pipe have given better service under such vibratory conditions than the materials which were previously used.

Higher endurance limit: This improved vibration resistance was borne out by a simple laboratory test in a Haigh "fatigue" testing machine. Loads were applied to test strips of lead which were subjected to rapid, repeated stresses simulating vibration. Nearly twice the load was required to fracture a Tellurium Lead specimen as a specimen of lead without tellurium. Among technologists Tellurium Lead's higher "endurance limit" is generally accepted as a measure of its resistance to vibration failure.

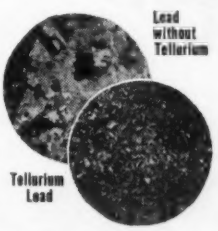
☆ ☆ ☆

Tellurium Lead's greater resistance to vibration, as well as its generally superior performance under heat changes, elevated temperatures and stress-corrosion, is believed to result from a combination of the characteristics enumerated below, which distinguish it from lead without tellurium.



1. Strengthens under stress: Tellurium Lead has the ability to "work-harden." Physical stress actually increases its tensile strength and makes it more fracture-resistant than before. For example, these pipes of Tellurium Lead (top) and lead without tellurium (bottom) were stamped with their respective names and pulled out at equal rates in a tensile testing machine. Note how the Tellurium Lead was toughened by the stamping, how it work-hardened and developed strength, whereas the lead without tellurium was weakened—and fractured.

2. More uniform grain structure: Undoubtedly another factor is Tellurium Lead's generally more uniform and finer grain structure as shown in photomicrographs at right. As a result, its surface is smoother—there is less possibility of pitting and local corrosion.



3. Higher recrystallization temperature: Another result of the addition of tellurium to lead is a raising of the recrystallization temperature.

Ordinary lead recrystallizes below room temperature. For this reason the hardness developed in lead by cold "working" is not retained. The grain structure produced by working is not permanent since, as soon as the working ceases, the grains "grow."

Tellurium Lead recrystallizes at more than 200° F. It thus retains the hardness developed by working and the grains of Tellurium Lead do not begin to "grow" until a relatively high temperature is reached. In laboratory tests, extruded strips of Tellurium Lead, annealed at 150° C. for six months, showed no grain enlargement. This freedom from grain growth at temperatures up to 200° F. is believed to be beneficial both from the standpoint of corrosion resistance and physical strength.

☆ ☆

Where it is used: Tellurium Lead is widely used in contact with sulfuric acid and sulfates, phosphoric acid and chromic acid. It may also be used in contact with pickling, electroplating and other corrosive solutions.

Among the types of chemical operations in which Tellurium Lead is employed are: chlorinations, reaction chambers, reductions, pickling, sulfonations.

Typical installations include: agitators, aprons, drums, ducts, fans, flooring, heat exchangers, heating and cooling coils, kettles, pans, stills, sulfuric acid chambers, table tops, tanks, vats.

☆

How it is applied: Tellurium Lead may be bent, seamed, flanged, burned, in the same manner as chemical lead.

WHAT USERS REPORT:

"We have installed a number of tank linings using Tellurium Lead. It has been very satisfactory in cases of hot liquor and agitation where in the past some of the upright seams have cracked."

• • •

"Tellurium Lead is used in our chlorinators for bond-coating steel agitators, thermometer wells, chlorine inlet spouts, etc., and is exposed to relatively low concentrations of chlorine and hydrochloric acid gases at 50-75° C. Its rate of corrosion is about half that of ordinary lead."

• • •

"We highly recommend Tellurium Lead for heating and cooling coils. It has also been giving very good service in agitators, saturators, pickling and etching tanks."

TELLURIUM LEAD

What it is: Tellurium Lead of our manufacture is time-tested St. Joe chemical lead alloyed with a small quantity of tellurium. It gives the advantages of this well-known chemical lead plus important new ones.

Available forms: Tellurium Lead is available in sheet or pipe form or fabricated in coils for heating and cooling purposes.

For further information or advice regarding the use of Tellurium Lead, write:

NATIONAL LEAD COMPANY—New York 6, Baltimore 3, Buffalo 3, Chicago 80, Cincinnati 3, Cleveland 13, St Louis 1. National-Boston Lead Co., Boston 6; John T. Lewis & Bros. Co., Philadelphia 7; National Lead & Oil Co. of Penna., Pittsburgh 12; Georgia Lead Works, Atlanta; American Lead Corp., Indianapolis 6; Master Metals, Inc., Cleveland 13; Morris P. Kirk & Son, Inc., Los Angeles, Calif. The Canada Metal Co., Ltd., Toronto, Montreal, Winnipeg, Vancouver.

Specialization Wins

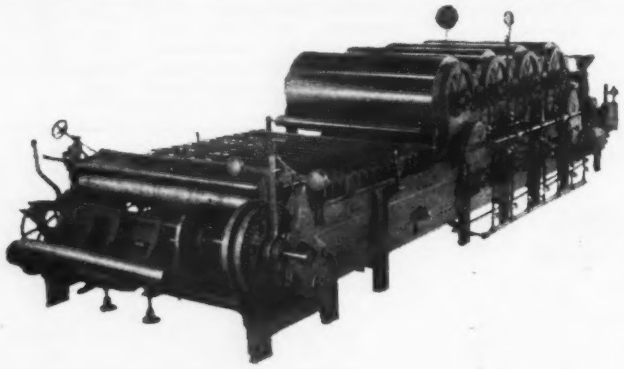
IN WAR AND PEACE

~

JOHNSON RAYON WARP SIZERS

Are designed and built by specialists, in a plant entirely devoted to the production of machines for slashing of synthetic yarn warps.

As a result the sizing needs of the mills have been anticipated constantly, and Johnson equipment is in use by leading mills here and in NINETEEN foreign countries.



Charles B. Johnson MACHINE WORKS

PATERSON P. O. Box 1507 NEW JERSEY

Uneven Spun-Rayon Yarn

Technical Editor:

Under separate cover we are sending you several 1-yd. swatches of a spun-rayon fabric that shows uneven filling. You will note that this condition comes and goes with individual quills as can be seen by referring to the transfer tails along the selvages. (Several are marked.) This condition appears irregularly. Some pieces of our cloth contain many bands of uneven filling whereas others are completely free of this defect. What can you tell us that might be of help?

We use yarn from the same roving for both warp and filling, but so far have not noticed this defect in the higher-twist warp yarn. Could the twist be a factor in causing this? (8966)

The fact that you sent us a large number of swatches to examine has been of great help in ascertaining the probable cause of the uneven filling occurring in the fabric samples which you submitted.

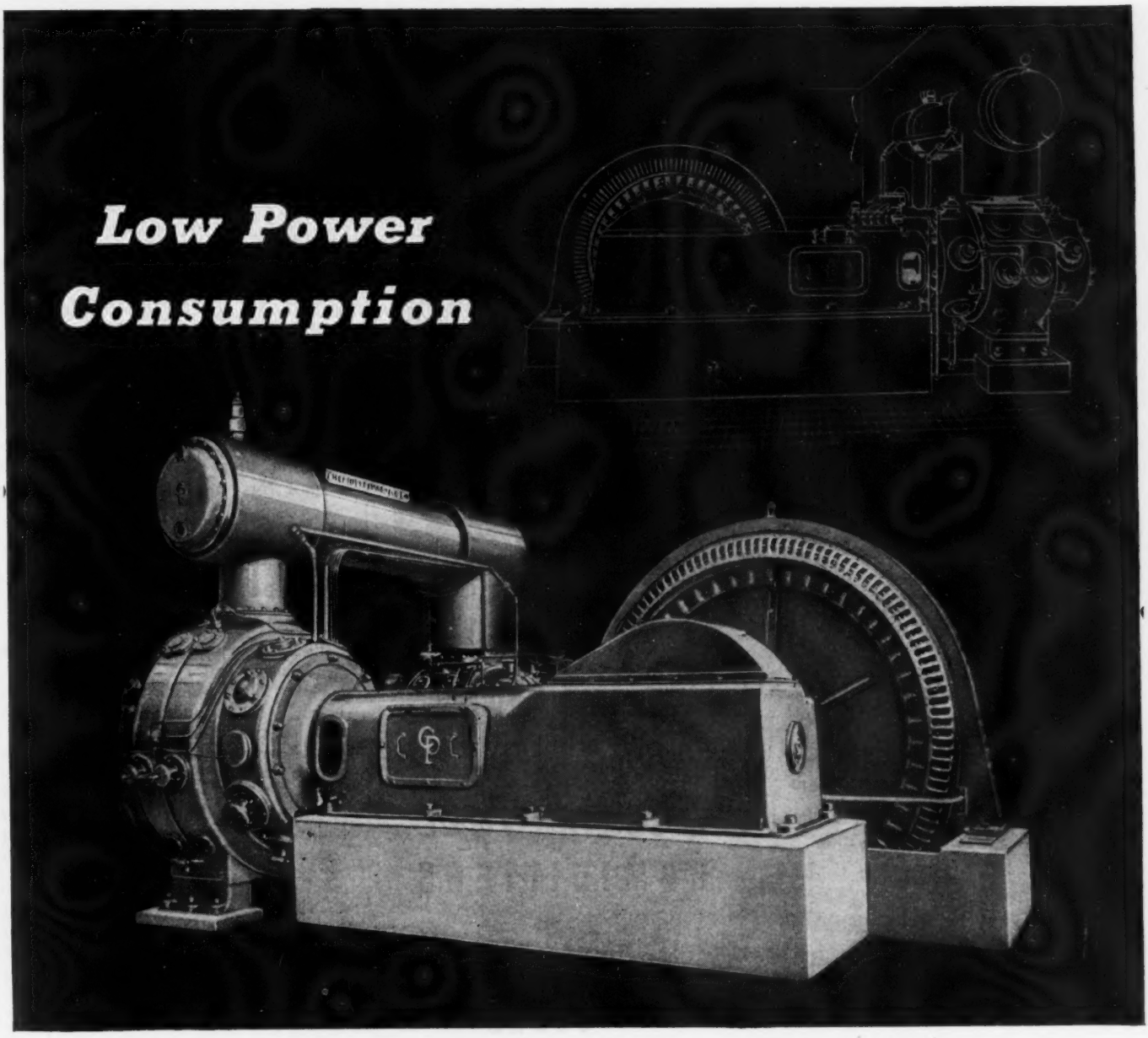
Our observation confirms yours that this condition is confined to individual quills. There appear to be two types of unevenness: one which patterns and is reasonably uniform in length from light to normal places, and one which varies irregularly from heavier-than to lighter-than normal.

This indicates that there may be two different causes for this trouble. The regular unevenness occurs in fewer instances than the irregular, and the light regular places repeat in relatively short lengths. They probably are caused on the spinning frame, possibly from a crooked roll. If this is true, the trouble can be found, if it has not already been, by sighting down the spinning frames to see if any clearer boards move up and down. The condition of the top rolls, the saddles, weights, etc., should also be checked.

The irregular unevenness will be much more difficult to find. On spun-rayon yarns this condition is frequently caused on slubber or intermediate frames. Be sure that the tension on them is as light as possible and that the twist is just sufficient to enable the roving to pull the roving package. Tension often appears to be light on spun rayon when it is not. The ends should definitely be "bagging."

A test to indicate that the tension is as light as possible test it by removing a layer off one bobbin and restarting. If the end will run after doing this, the tension is too great. Tension should be checked both near the start and near the end of the doff.

If a roving tester is available, it might quickly show where this ap



BUILT INTO CP CLASS O-CE COMPRESSOR

THE low power consumption of the heavy-duty Chicago Pneumatic Class O-CE Compressor is the result of large area, durable, quick-acting Simplate valves . . . streamlined air passages . . . multi-step capacity regulation . . . thoroughly effective intercooling and water jacketing and efficient lubrication.

CP Class O-CE Compressor is of the horizontal, double-acting, water-cooled type with direct-mounted synchronous motor drive. Capacities range from 350 c.f.m. to 10,000 c.f.m., 80 pounds to 125 pounds pressure. Other sizes available for lower and higher pressures and for other types of drive. Write for Bulletin 726.

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General Offices: 8 East 44th Street, New York 17, N. Y.

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AIR COMPRESSORS
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DRY AIR is a Costly Nuisance

Controlled Humidity:
Reduces Fibre Breakage
Makes Higher Production Possible
Reduces Waste
Controls Fly Dust
Provides More Comfortable, Healthful Conditions
Reduces "Static" Hazards
Prevents Container Spoilage

Combat it with ARMSTRONG *Steam Type* HUMIDIFIERS

The big trend in textile mill humidification is to a newer, better, lower cost development—Armstrong Steam Type Unit Humidifiers. They do not require a big investment—a $100 model, installed like a unit heater will handle 40,000 cu. ft. of space. Operation costs as little as two cents per hour for one unit. Extreme sensitivity, ability to maintain almost perfectly uniform humidity, quiet operation, freedom from frequent maintenance—these are some of the features that have made them the coming thing throughout the textile industry. There is a sales and service representative near you. Write for his name today.

A FEW USERS

Van Raalte Co.; Julius Kayser & Co., Ltd.; Belding Corticelli, Ltd.; Arkwright Corporation; Faribault Woolen Co.; Bear Brand Hosiery Co.; Moosehead Woolen Mills; Carthage Mills; New Bedford Cordage Co.; Shawmut Woolen Mills; Priscilla Worsted Mills; Dixie Mercerizing Co.; Huntington Textile Co.; Guerin Mills, Inc.

•

NEW BULLETIN NO. 158

An educational discussion on humidification. Includes charts, data, tables; describes Armstrong Humidifiers completely. Ask for a copy.

ARMSTRONG MACHINE WORKS
872 Maple Street, Three Rivers, Mich.

ARMSTRONG
STEAM TYPE UNIT HUMIDIFIERS

parently more prevalent type of unevenness is occurring.

It is assumed that at least one process of drawing is employed. If not, it is recommended that this process be included or at least that laps and card sliver both be checked for uniformity.

Mention was made that, although the same roving is used for both warp and filling, the unevenness does not appear in the warp. This most likely is because the large number of ends making up the warp tends to cancel an occasional uneven thread. Winding a sufficient number of warp and filling bobbins on blackboards and examining them should show whether or not this unevenness occurs in the warp also.

Size Formula for Blended Yarn

Technical Editor:

Please recommend a size formula for 8s blended yarn for a drapery fabric warp, made at 50%, ⅞-in. cotton; 25% viscose, 1½-in., 3 denier; and 5-denier Teca, spun with a 4 twist multiple.

We have been using a size formula that is standard for our 8s cotton warp made of ⅞-in. cotton which uses a 4.75 twist multiple, but we need a softer hand and at the same time still get maximum strength and weaving resistance in the warp yarn. (8970)

Not knowing the picks and construction of the cloth, it is difficult to answer this question. However, we are listing below a suggested formula for 100 gallons of finished size:

37½ lb. of converted starch or gum.

4 lb. of sulphonated vegetable oil or emulsified tallow.

Cook at normal temperature. When cool add approximately 12½ lb. of gelatin.

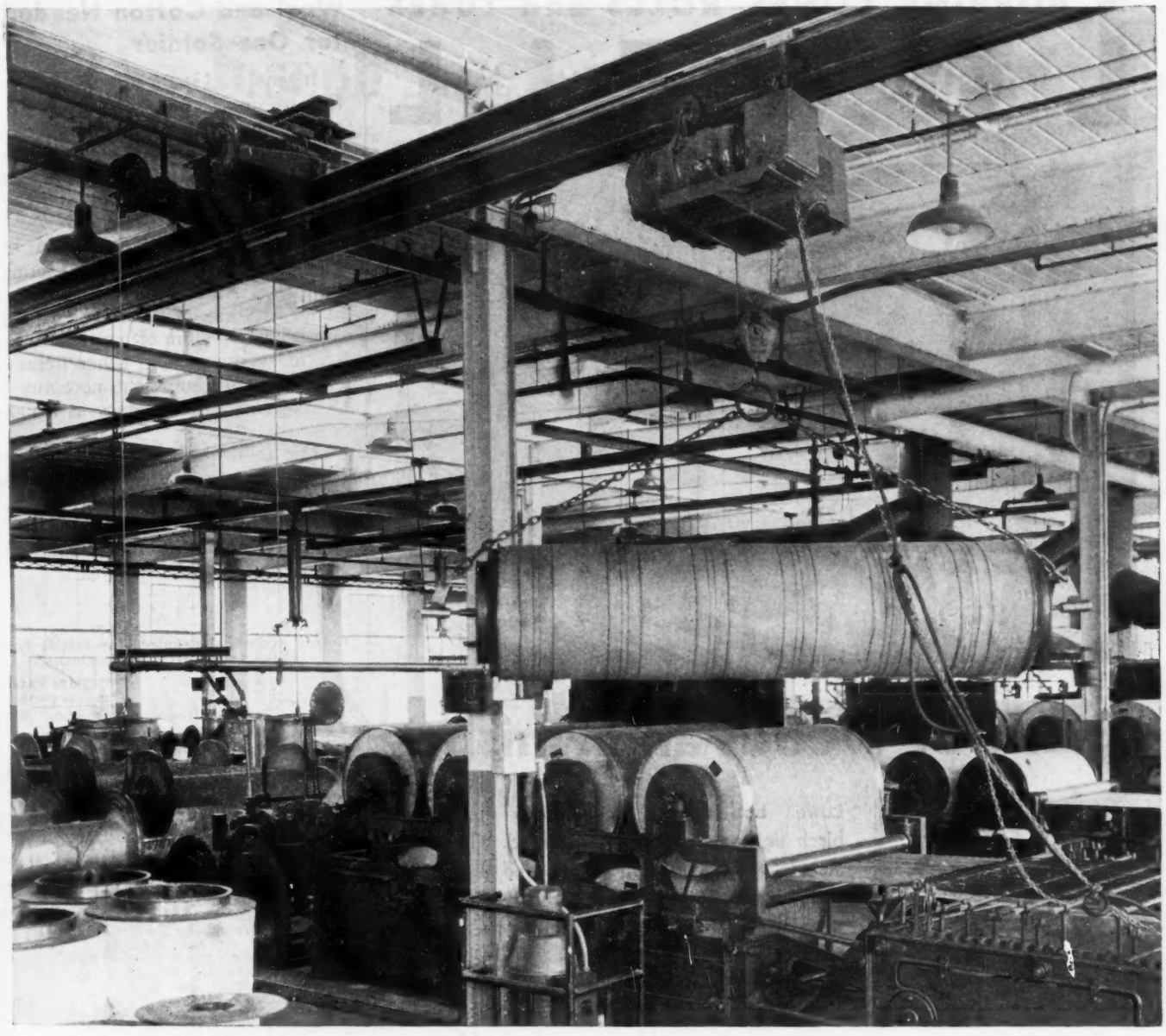
The gelatin should help the 5-denier acetate and soften the entire warp. Naturally, with gelatin added the temperature should be kept around 160 or 170° F.

•

Urges Fire-Extinguisher Drill in Mills

"Hold an employee fire-extinguisher drill" is a suggestion to industrial and business managements for an employee activity during Fire Prevention Week, to be observed Oct. 8 to 14.

The simplest way to hold a fire extinguisher drill is to have the employees attend a demonstration where the various types of extinguishers on the premises are operated and their use on the different classes of fire is explained.



It's Ready For the Peacetime "Go" Sign

Just before war struck, this mill installed a nine-cylinder combination cotton and rayon slasher made of ARMCO Stainless Steel. Huge quantities of wartime textiles have rolled from its smooth cylinders. And just as important, this slasher will be ready for a fast change-over to civilian goods the day the war is won.

Besides being rugged enough to "stand the gaff" of constant production, stainless requires little care. In wet processing equipment, for example, there are only two things to remember: Expose the metal to air overnight at least once a week, and keep the surfaces free of lint and other deposits. A thorough rinse with hot water is all that is needed.

If you have stainless steel equipment, you'll be in the driver's seat in the rush for postwar business. If some of your equipment is worn, obsolete or inefficient, you are no doubt already planning an after-the-war replacement program.

Much of your post-war equipment can advantageously be made of ARMCO Stainless Steel. Dyeing and fulling machines and bleaching equipment are a few examples. Keep this rustless war-proved metal in mind when you plan your new machines. For information write to The American Rolling Mill Company, 2971 Curtis St., Middletown, Ohio.

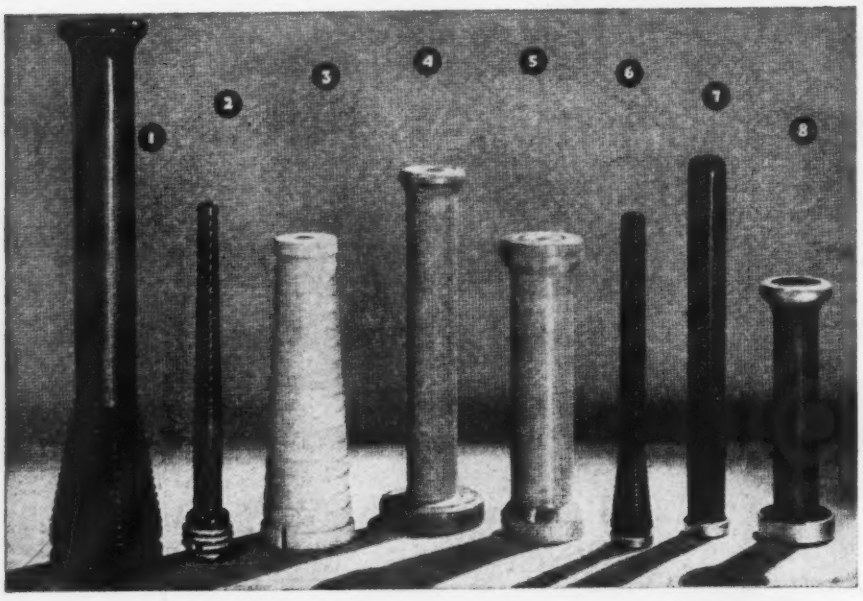
STAINLESS ARMCO STEEL

EXPORT: THE ARMCO INTERNATIONAL CORPORATION

THE AMERICAN ROLLING MILL COMPANY

BOBBINS, CONES, ROLLS and TUBES

LOWELL



Choice of Woods and Finishes

1. Whitin Ring Spinning Bobbin.
2. Automatic Loom Filling Bobbin.
3. Winder Cone.
4. Worsted Twister Bobbin.
5. Winder Tube.
6. Enameled Filling Bobbin.
7. Warp Bobbin.
8. Worsted Spinning Bobbin.

Lowell bobbins are made from maple, birch or beech wood, as required. They include spinning bobbins (warp and filling) and twister bobbins for COTTON mills; weaving quills for RAYON mills; mule and spinning frame bobbins for WOOLEN mills; and spinning and twisting bobbins for WORSTED mills. All wood used in these products is thoroughly seasoned, air dried and, when necessary, also kiln dried in modern dry kilns. They are finished with oil, lacquer, shellac or enamel (baked on) as required. All enameling is done in our own shop, so that we have complete control over and assume complete responsibility for the finished product. This policy also speeds up deliveries.

OTHER LOWELL PRODUCTS of a similar type are wood cones, rolls and tubes. They are made from the same thoroughly seasoned and carefully dried wood as Lowell bobbins and can be furnished with any finish desired.

LOWELL SHUTTLE CO.

Established in 1896. *Incorporated in 1914*

15 TANNER STREET LOWELL, MASS., U. S. A.

Wool and Cotton Needed for One Soldier

It requires 136.06 sq. yd. of cotton material and 45.23 sq. yd. of wool material to equip initially and maintain a soldier in the United States for one year, according to a tabulation made in the Office of The Quartermaster General.

In addition to materials which can be measured in yards, the Quartermaster Corps also supplies to each man about 41.98 lb. of cotton and 5.95 lb. of wool in the form of mattress filling, knitted garments and other items of clothing and equipment necessary to his comfort and efficiency as a fighting man.

The following tabulation, prepared by the Quartermaster Corps, shows the amount of cotton and wool materials in both yards and pounds which a soldier receives as initial issue and replacements in the first year:

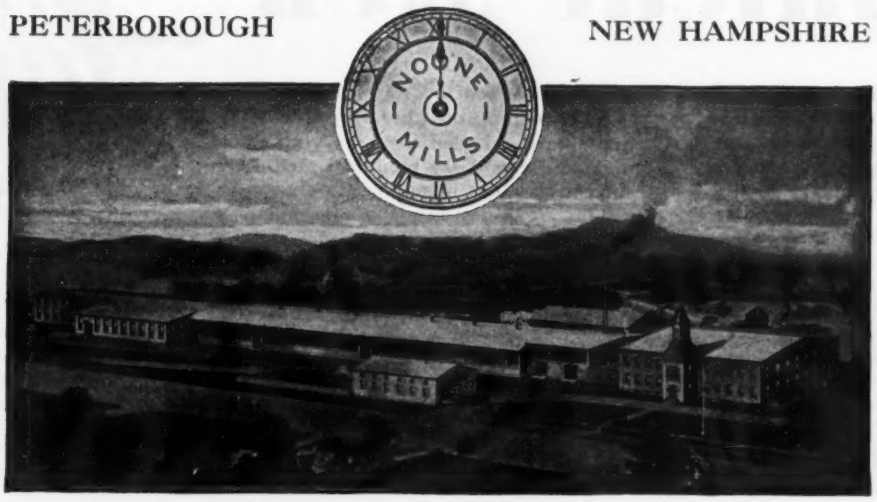
Cotton and Wool Required for Initial Issue Plus One Year's Replacement

No.		Square Yards (*means pounds)	
Issued,	Clothing Items	Cotton	Wool
1	Belt, Web, Waist	.065	
1	Cap, Garrison, Cotton Khaki	.600	
1	Cap, Garrison, OD Wool	.075	.377
1	Cap Herringbone Twill	.824	
1	Cap, Field, Cotton OD with Visor	.818	.089
1	Coat, Wool, Serge, OD	3.417	4.007
4	Drawers, Cotton, Shorts	9.317	
2	Drawers, Wool	*1.248	*1.549
1	Gloves, Wool, Leather Palm		*.619
4	Handkerchiefs, OD	2.630	
1	Jacket, Field M-1943	6.820	4.079
1	Jacket, Herringbone Twill	7.925	
2	Leggings, Canvas, Dismounted, OD, M-1938	1.929	
2	Neckties, Cotton, Mohair	.852	
1	Overcoat, Wool, OD, Roll Collar	3.918	6.763
3	Shirts, Cotton, Khaki	11.960	
2	Shirts, Flannel, OD, Coat Style	.140	8.423
3	Socks, Cotton, Tan	*1.125	
3	Socks, Wool, Heavy	*.801	*2.025
3	Trousers, Cotton, Khaki	13.174	
1	Trousers, Herringbone Twill	7.350	
2	Trousers, Wool, OD	2.568	6.042
4	Undershirts, Cotton, Summer, Sleeveless	*3.190	
2	Undershirts, Wool	1.480	1.760
	Total Individual Clothing, Sq. yd.	74.381	29.781
	Pounds	7.84	5.95
No. Issued,	Equipment Items		
2	Bag, Barrack, OD	5.323	
3	Blanket, Wool, OD M-34 3¾ lb.		15.451
1	Cover, Canteen, Dismounted, M-10	.267	
2	Cover, Mattress	13.360	
1	Towel, Bath, OD	1.559	
1	Tent, Shelter-half	7.410	
	Total Individual Equipment, sq. yd.	27.92	15.45
No. Issued,	Barracks Items		
1	Comforter, Cotton Filled, sq. yd.	16.339	
1	Comforter, Cotton Filled, lb.	*6.613	
1	Mattress, Cotton, sq. yd.	5.618	
1	Mattress, Cotton, lb.	*27.523	
1	Pillow, Feather	.976	
2	Pillowcases	3.139	
1	Sheet, Cotton	7.691	
	Total Equipment, sq. yd.	33.76	
	Total Equipment, lb.	34.14	

The Joseph Noone's Sons Company

A. Erland Goyette, Owner

PETERBOROUGH NEW HAMPSHIRE



Established 1831

Noone's Standard Roller Cloths

Insist on Noone's Standard Roller Cloths for your Spinning Rolls. Noone's have been Standard since 1831.

Results and costs are what count most.

Use Noone's Roller Cloth and be assured of a Strong Round uniform yarn, the best obtainable. Eventual cost, less than any other covering.

Good spinning can always be obtained when Noone's Roller Cloth is used, as it is the properly built Cloth,—has the correct cushion and consistency, and uniform gauge.

Noone's is best by test.

Many materials have been used for Spinning Roll Covering in years past, but have eventually been discarded in favor of the dependable Woolen Roller Cloth and Leather.

Do not be misled, put your faith in the good Old American Products: Noone's Roller Cloth and Leather. If in doubt, allow us to demonstrate the superiority of our Roller Cloth and a leather cot.

Use Noone's Roller Cloths, Noone's Slasher Cloths, Noone's Clearer Cloths.

Noone's are the Pioneers in Mechanical Cloth Manufacturing in America.

WILLIAM R. NOONE & COMPANY

Selling Agents

ARNOLD T. MALONE, Manager

105 Washington Street Boston, Mass.

An Important Message to

Technical Men

The war has carried the engineering age to a new peak! Production demands have created technical problems the like of which the world has never seen before! The services of engineers are at a premium. Especially the services of one particular class—executive engineers—*engineers with business training;* engineers who can "run the show."

In these critical times, the nation needs engineers of executive ability *now, today*—not five, or ten years from now! The shortage of such men is acute—even more acute than that of skilled production workers. And company heads, aware of this situation, are offering high rewards to engineers who have the necessary training in industrial management.

Golden Opportunity for Engineers

In this new era, the engineer with vision and foresight has a golden opportunity. He will realize that out of today's tremendous production battles will emerge technical men who not only will play a major role in winning the war, but who also will be firmly entrenched in key executive positions when peace comes.

However, before the engineer can take over executive responsibilities, he must acquire knowledge of the other divisions of business—of marketing, accounting and finance. He has of necessity a vast amount of technical training and experience. But in order to grasp the opportunities that present themselves today—to assume leadership on the production front—he must *also* have an understanding of practical business principles and methods.

The Alexander Hamilton Institute's intensive executive training can give you this essential business training to supplement your technical skill. It is a time-saving program that fits into the most crowded schedule. It is not intended for men who expect to remain just engineers for the rest of their lives. It is for those willing to train for the position that now seems just a little beyond them—the position which will increase their incomes today and make their security more certain when the war has ended.

134,000 men on the operating side of business have enrolled for this training. More than 37,500 are technical men—engineers, chemists, metallurgists—many of whom are today heads of our huge war industries.

This training appeals to engineers because it gives them access to the thinking and experience of the country's great business minds. It is especially valuable to such men because it is basic, not specialized—broad in scope, providing a thorough groundwork in the fundamentals underlying *all* business. It covers the principles that every top executive must understand. It applies to all types of industrial organizations, because all types of organizations are based on these same fundamentals.

Business and Industrial Leaders Contribute

The Institute's training plan has the endorsement of leading industrialists and business men. And it is only because these high-ranking executives recognize its value and give their cooperation that such a plan is possible. Among those who contribute to the Course are such men as Frederick W. Pickard, Vice President and Director, E. I. DuPont de Nemours & Co.; Thomas J. Watson, President, International Business Machines Corp.; James D. Mooney, President, General Motors Overseas Corp.; Clifton Slusser, Vice President, Goodyear Tire and Rubber Co. and Colby M. Chester, Chairman of the Board, General Foods Corp.

Send for "FORGING AHEAD IN BUSINESS"

The facts about the Institute's plan and what it can do for you are printed in the 64-page book, "Forging Ahead in Business." This book in its own right is well worth your reading. It might almost be called a handbook of business training. It is a book you will be glad to have in your library, and it will be sent to you without cost. Simply fill in and mail the attached coupon *today.*

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Please mail me without cost a copy of the 64-page book—"FORGING AHEAD IN BUSINESS."

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BOOSTING EMPLOYEES'

Morale

Army Stages "Battle Show" for Mill Workers

War Department efforts to spur cotton-textile production in North Carolina have crystallized in a "Battle Show" staged by Camp Sutton, N. C., personnel for mill workers. Devised jointly by the camp's public relations, morale services and training branches, the "Battle Show" played from one to three-night stands at Gastonia, Shelby, Lowell, Lincolnton and Kings Mountain.

The nucleus of the show consists of an elaborate and realistic combat demonstration, a showing of motion pictures heretofore restricted to Army posts, martial and popular band music, variety entertainment, and recountals of overseas experiences by decorated veterans of the war.

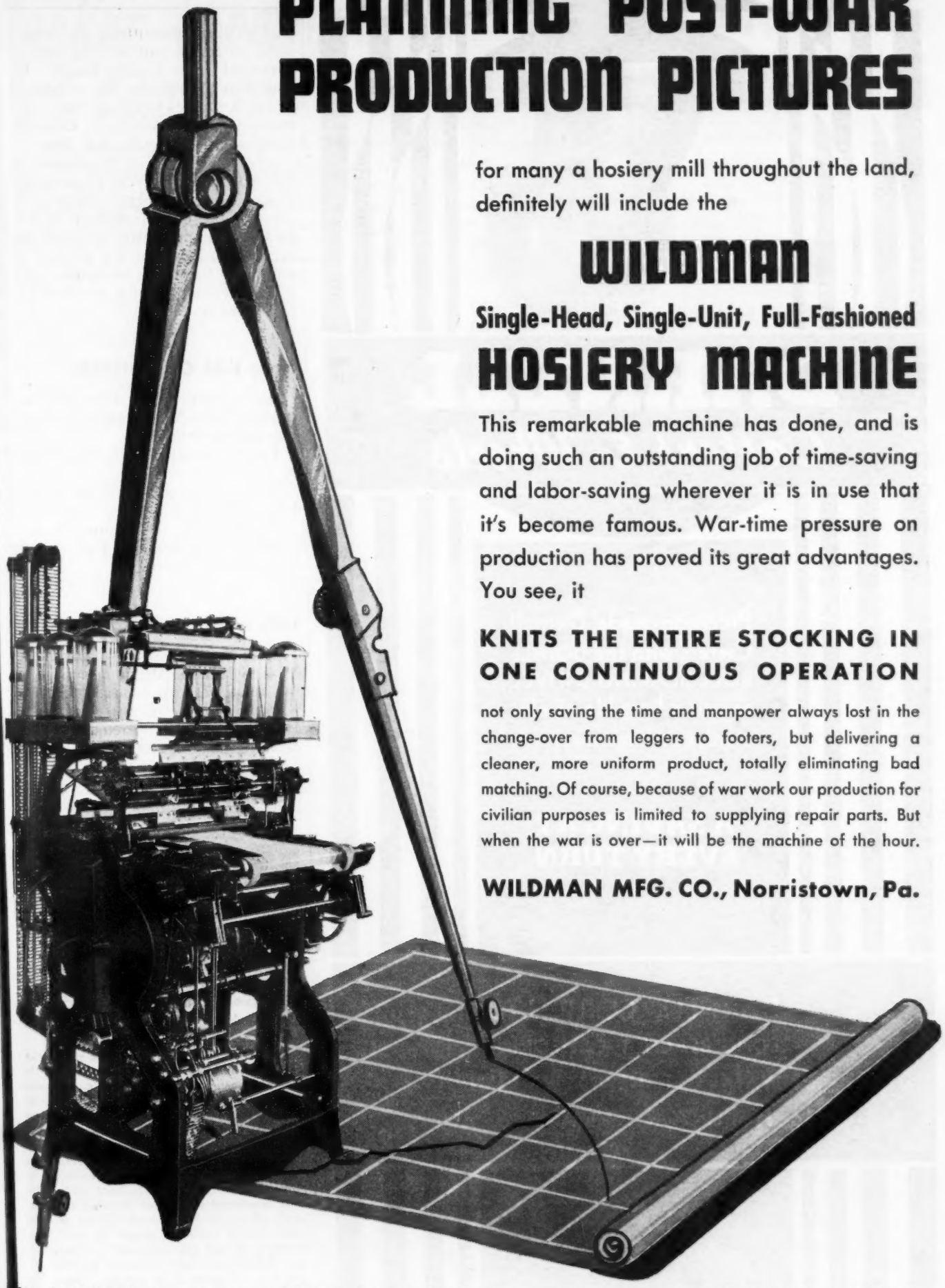
Behind the War Department's sponsoring of this project, one of many camp shows now taking the road simultaneously throughout the cotton-mill areas of the South, lies the Army's belief that textile workers fail to realize the gravity of the fabric shortage which faces the nation as the war approaches its critical stage.

Camp Mackall military authorities

Photo by U. S. Army Signal Corps

***WAC CLOTHING** is shown to attractive personnel of Waverly Cotton Mills, Laurinburg, N. C., by Pvt. Thomas J. McGlinchy, of Brooklyn, N. Y., at the Textile Workers Rally held recently in Laurinburg.*

PLANNING POST-WAR PRODUCTION PICTURES



for many a hosiery mill throughout the land, definitely will include the

WILDMAN

Single-Head, Single-Unit, Full-Fashioned

HOSIERY MACHINE

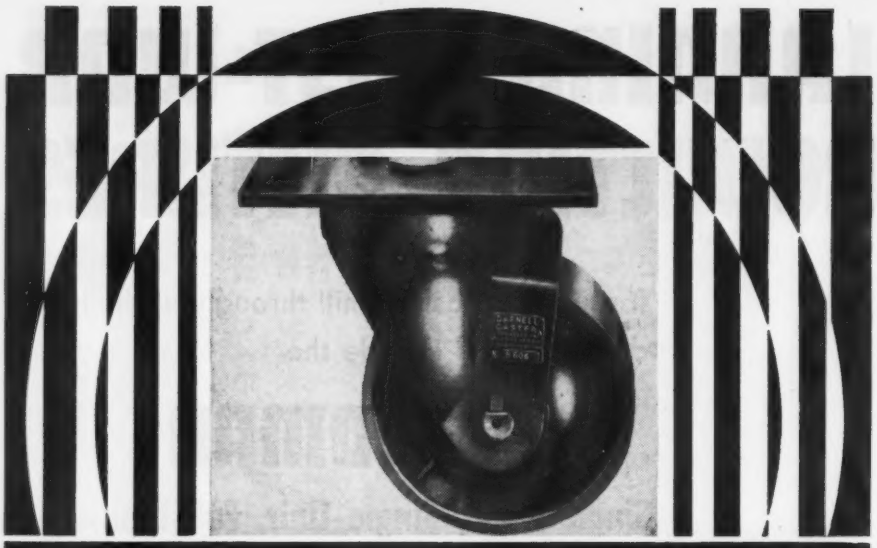
This remarkable machine has done, and is doing such an outstanding job of time-saving and labor-saving wherever it is in use that it's become famous. War-time pressure on production has proved its great advantages. You see, it

KNITS THE ENTIRE STOCKING IN ONE CONTINUOUS OPERATION

not only saving the time and manpower always lost in the change-over from leggers to footers, but delivering a cleaner, more uniform product, totally eliminating bad matching. Of course, because of war work our production for civilian purposes is limited to supplying repair parts. But when the war is over—it will be the machine of the hour.

WILDMAN MFG. CO., Norristown, Pa.

FOR AMERICA THROW YOUR SCRAP INTO THE FIGHT • AMERICAN INDUSTRIES SALVAGE PROGRAM



DARNELL
Casters & Wheels

Precision-made Darnell Casters with the DOUBLE BALL-BEARING SWIVEL assure a long life of efficient, economical service

A SAVING AT EVERY TURN

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and civilian committees also staged rallies in textile centers using military personnel from Camp Macall. Included in the list of cities, in each of which five rallies were held, one every two weeks, were Albemarle, Concord, Kannapolis, Lexington, and Troy.

The Fourth Service Command, at the request of the War Department, is sponsoring a program designed to alleviate the critical shortage of textiles. A comprehensive program has been worked out for the purpose of improving the morale of textile operatives, including rallies at textile towns in South Carolina.

New L-M Committees

Among mills which have newly-organized Labor-Management Committees are the following:

Empire Worsted Mills, Jamestown, N. Y.

National Automotive Fibers, Inc., Little Falls, N. Y.

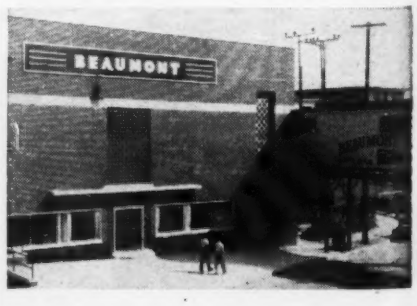
Waldrich Co., Delawanna, N. J.

Winget Kickernick Co., South Minneapolis, Minn.

Mill Workers Help Win War

S. Y. Austin, president of Avondale Mills, Sylacauga, Ala., in a message to his employes emphasized the importance of every job in a cotton mill. He urged employes to remember that "coming to work every day is helping to win the war."

"Some cotton-mill jobs require more skill than others," he said, "but



BEAUMONT MFG. CO.'s new two-story brick cafeteria building erected adjacent to the mill at Spartanburg, S. C., with an entrance for employees from the bridge that connects the two sections of the mill. The dining room is on the first floor and employees will enter down a long ramp. The serving counters are complete with steam tables, coffee urns, glass shelves for desserts, and refrigerated containers for ices. The tables, each seating ten very comfortably, are not crowded together, and, while placed to seat 200 at a time, leave ample room for people to walk comfortably to and from all parts of the room. Schedules have been arranged so the employees will come in in groups. Those who prefer may bring their own lunch, but all lunches must be eaten in the cafeteria.

Hooker Chemicals for Today's Old Jobs and Tomorrow's New Jobs

Dye and textile chemists are also waging offensives on two fronts. On one, they are beset by the problems of securing the chemicals they need to keep production going. On the other, they are striving to continue their research work in developing improved dyes and superior textiles for the post-war markets. Hooker is providing the help for both these problems. Among the many chemicals Hooker is regularly making and has available in the quantities you need are catalysts, and dye intermediates, chlorinating agents and solvents as indicated below:

PRODUCT	FORMULA	DESCRIPTION	SUGGESTED USES
Aluminum Chloride, Anhydrous	$AlCl_3$	Gray crystalline solid	Catalyst in syntheses of dye stuffs and intermediates
Antimony Trichloride, Anhydrous	$SbCl_3$	Yellowish solid	Catalyst in organic syntheses—Mordant
Benzoate of Soda	C_6H_5COONa	White crystalline solid	Intermediate for manufacture of dyes
Benzoic Acid	C_6H_5COOH	White crystalline solid	Manufacture of dyes—Mordant
Benzoyl Chloride	C_6H_5COCl	Clear, colorless to light yellow liquid	Dyestuff intermediates
Chlor Anisidine	$NH_2 \cdot C_6H_3 \cdot Cl \cdot OCH_3$	Gray crystalline solid	Dye intermediate
Metanitrobenzoyl Chloride	$C_6H_4NO_2COCl$	Yellow to brownish liquid, partially crystallized	Manufacture of dyes
Paranitrobenzoyl Chloride	$C_6H_4NO_2COCl$	Yellow crystalline lump material	Manufacture of dyes
Phosgene (Carbonyl Chloride)	$COCl_2$	Colorless gas at ordinary temperatures, colorless to light yellow liquid under pressure	Manufacture of dyes and dye intermediates; chlorinating agent
Sulfuryl Chloride	SO_2Cl_2	Light yellow liquid	Chlorinating agent. Forms chlorides and anhydrides of organic acids
Thionyl Chloride, Refined and Technical	$SOCl_2$	Colorless to yellow or pale red liquid	Chlorinating agent. Forms organic acid chlorides
Cyclohexanol (Hexahydro Phenol)	$C_6H_{11}OH$	Clear, colorless liquid	Solvent
Orthodichlorbenzene	$C_6H_2Cl_2$	Clear, colorless liquid	Solvent
Chlorparaffin 20	$C_{25}H_{37}Cl_{15}$ (aver)	Amber colored viscous liquid, 40% Cl_2	Treating fabrics to render water repellent, and mildew proof
Chlorparaffin Resin 70	$C_{24}H_{29}Cl_{21}$ (aver)	Brittle resin. Amber lumps or white powder, 70% Cl_2	Treating fabrics to render water repellent, and mildew proof
Chlorparaffin Resin 80	$C_{24}H_{20}Cl_{30}$ (aver)	Brittle resin. Amber lumps or white powder, 80% Cl_2	Treating fabrics to render water repellent, and mildew proof

Chlorparaffin Resin 70 and 80 are new Hooker products. Additional information and physical data, prepared by Hooker laboratories are available upon request. Ask also for a copy of the Hooker General Products List. Among the many Hooker Chemicals, you may find the ones to help you meet your problems.

CAUSTIC SODA **LIQUID CHLORINE**
MURIATIC ACID **PARADICHLORBENZENE**
SODIUM SULFHYDRATE **SODIUM SULFIDE**

HOOKER ELECTROCHEMICAL COMPANY
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RYERSON STEEL IN STOCK

Call Ryerson for any kind, shape or size of steel you need. Steel for manufacturing, maintenance or construction ...all products are available for immediate shipment from any one of the ten convenient Ryerson Steel-Service Plants. Ask for a stock list...your guide to steel.

Principal Products Include:

Bars • Shapes • Structurals
Plates • Sheets • Floor Plates
Alloy Steels • Tool Steels
Stainless Steel • Screw Stock
Wire • Mechanical Tubing
Reinforcing Steels • Shafting
Babbitt • Nuts • Bolts
Rivets • Welding Rod • Etc.

JOSEPH T. RYERSON & SON, INC.
STEEL-SERVICE PLANTS AT: CHICAGO, MILWAUKEE, ST. LOUIS, DETROIT, CLEVELAND, CINCINNATI, BUFFALO, BOSTON, PHILADELPHIA, JERSEY CITY

Why Not? *Have your* PERSONAL ACCIDENT *and* HEALTH INSURANCE *with . .*

EASTERN COMMERCIAL TRAVELERS

Mutual Association • Direct Purchase
No Branch Offices
Massachusetts Company, Incorporated 1894

Insure Your Earnings . . . Protect All

ACCIDENT POLICY PAYS		SICKNESS POLICY PAYS	
ACCIDENTAL DEATH $5,000-$10,000	WEEKLY DISABILITY $25.00-$50.00	$25.00 per Week for Confininng Sickness	$10.00 per Week for Non-Confining Sickness
Estimated Annual Cost $15		Estimated Annual Cost $20	

50 YEARS OF UNFAILING SERVICE
Provides protection 24 hours a day when traveling, while at work, around the home or on vacation
NO POLICY CANCELLED OR RATES INCREASED OR BENEFITS REDUCED ON ACCOUNT OF ANY AGE!

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John S. Whittemore, Sec.-Treas.
Eastern Commercial Travelers
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Without obligation, please send complete information and application for membership to

Name .....

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if the job is done well, the one who does it has a right to be proud of what he or she is doing."

Mr. Austin reminded employes that the Quartermaster Depot needs 122 yards of cotton goods yearly for every soldier and it is a real job to provide for 10 million men.

Distributes "News Digest" to Fellow Townsmen

M. T. Stevens & Sons Co., Sulloway Mills, B & K Hosiery Co. and Acme Knitting Machine & Needle Co. in Franklin, N. H., are among the sponsors of "News Digest," a weekly publication mailed free to anyone interested in that city.

Riverside to Raise Memorial to its War Dead

The Riverside & Dan River Cotton Mills, Danville, Va., have lost 28 of their former employes killed in action on many fronts and probably twice as many wounded and missing in action. A check is being made of the casualties preparatory to the raising of a suitable memorial to the dead.

WMC Office in N. C. Urges More Publicity

The North Carolina office of the War Manpower Commission recently in a memorandum to all local managers urged that newspaper publicity be given to the importance of the cotton textile industry in the war effort.

•

Draft Constants

(*Continued from page* 143)

15.20 = 17.02. Then, 17.02 x 2 = 34.04, or 34s yarn delivered. The breakdown of the draft between the rolls is as follows: 2.00 hank x 1.12 = 2.24 hank or count. Then 2.24 x 15.20 main draft = 34.04 yarn count. As the break-draft is usually a fixed draft, the main draft is retraced from the middle roll through the gearing to the front roll.

Using the constant 614.4, we divide it by 17.02 total draft to find the draft gear. Therefore, 614.4 ÷ 17.02 = 36 draft gear. The completed draft gear train: $\frac{84 \times 160 \times 8}{36 \times 25 \times 7} = 17$ mechanical draft.

We can now figuratively turn the middle-roll break-draft gear once and trace through all the gearing to find the main draft: $\frac{25 \times 84 \times 160 \times 8}{28 \times 36 \times 25 \times 7} =$ 15.2 main draft.

HERE'S how to make your hosiery line the smoothest in the world! Give it the ARKO finishing touch . . . the ARKO beauty treatment!

ARKO FINISHES make your HOSIERY

★ **LOOK wonderful — soft and sheer!**

★ **FEEL luxurious — smooth and resilient!**

★ **LAST satisfyingly — snag and run resistant, water-repellent and spot-proof!**

Ask for one of our technical experts to demonstrate the one-bath treatment with ARKO-FINISHES.

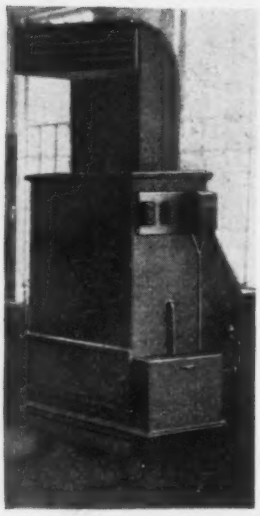
ARKANSAS CO., INC.

Manufacturers of Industrial Chemicals for over 40 years

Newark New Jersey

IMPROVE PRODUCTION WITH AIR-PERME-ATOR

("DRY" Humidification.)



"DRY" Humidification, because no free moisture is discharged into the room. The desired amount of humidity is *made inside the machine* by use of the principle of molecular suspension.

Used by many leading rayon, nylon, cotton, and woolen mills; in weave sheds, warping departments, and spinning rooms.

In Weave Sheds it makes possible quick starting on Mondays. Prevents smashes and many seconds. Reduces loom fixing. Prevents expansion and contraction of shuttles and sloughing off of quills.

In Jacquard Weaving prevents lowering and raising of harness.

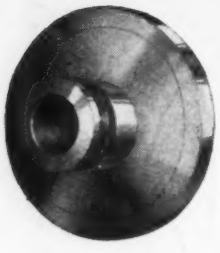
In warping, eliminates static and loose and tight ends.

Saves *Fuel* during the heating season.
Cools *the Air* in summer by evaporation.
***Low First Cost* and Maintenance Cost. Easily installed.**

AIR-PERME-ATOR MFG. CO.

8 Stout Street **Paterson 2, N. J.**

Worn Parts Reconditioned
actually outwear new ones



For Example: **Rollers.** We turn roller down and shrink on a Thomas & Skinner Long Life Tire made from special wear-resisting material. We also grind surface to correct diameter.

Thomas & Skinner Reconditioning Service restores cams, gears and other parts for full-fashioned knitting machines to their exact original size and shape. And one special processing gives T & S Reconditioned Parts a more enduring surface than the same parts had when new. Satisfactioned guaranteed.

T & S Products

We manufacture an extensive line of quality products for full-fashioned hosiery mills including Jacks, Narrowing Plungers, Narrowing Chain, Friction Springs, Snapper Springs, Magnetized Sinker Hooks, Cams, Running-in Machines, Locking Dials.

Thomas & Skinner Steel Products Co.

1119 EAST 23rd STREET • INDIANAPOLIS 5, INDIANA

News of the month

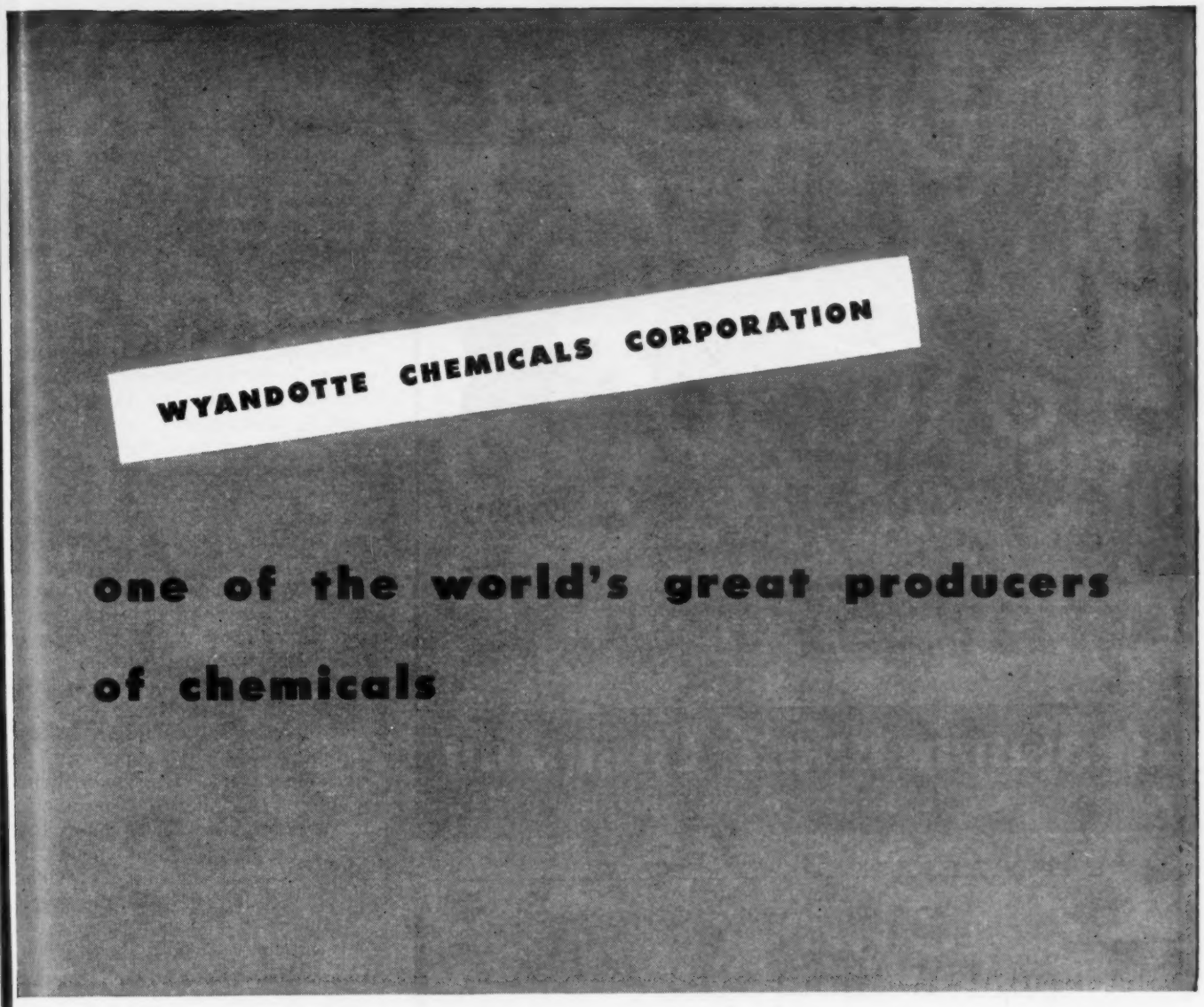
Mill Men Visit England. An American mission has been studying Britain's textile equipment facilities and cotton goods industry with a view to postwar cooperation, on the invitation of Sir Frank Platt, Cotton Controller. The American group comprised: George Lanier and Thomas Bancroft of the Textile Bureau of WPB; Walter Montgomery, of Spartan Mills, Spartanburg, S. C., vice-president of American Cotton Manufacturers Association; J. H. Bolton, of Whitin Machine Works, Whitinsville, Mass.; and W. L. Lowell, of Saco-Lowell Shops, Boston, Mass.

To Promote Cotton for Insulation. Six manufacturers of cotton insulation will join with the National Cotton Council, of Memphis, in an intensive promotional campaign. T. D. Cole is president of the Cotton Insulation Association, and is cooperating with Ed Lipscomb, of the Council.

Raises Ceilings on Yarns and Print Cloth. OPA has issued several new price ceiling schedules. The base grades of combed cotton yarns were elevated 10 to 15%, and of carded 7½%. New poundage price bases were set on many fabrics including Class A print cloths at 50.50¢, Class B at 52.00¢, and Class C at 53.50¢. The increase of about 2½¢ a pound over previous ceilings was effective only at mill levels and was not to be passed on by converters or other users.

More Duck. Military plans call for greatly expanded production of Army-type cotton duck during the third quarter of 1944—137,000,000 yd.; but WPB is convinced that because of the general situation, actual production will fall far short of that figure, probably being less than 50,000,000 yd. Among reasons given for the sudden military demand are the fact that tents are needed to house civilians in the rehabilitated areas; that more tents are needed by the Army in France than anticipated; and that tentage is now being ordered for the Pacific.

Clothing-Climate Relation. Office of

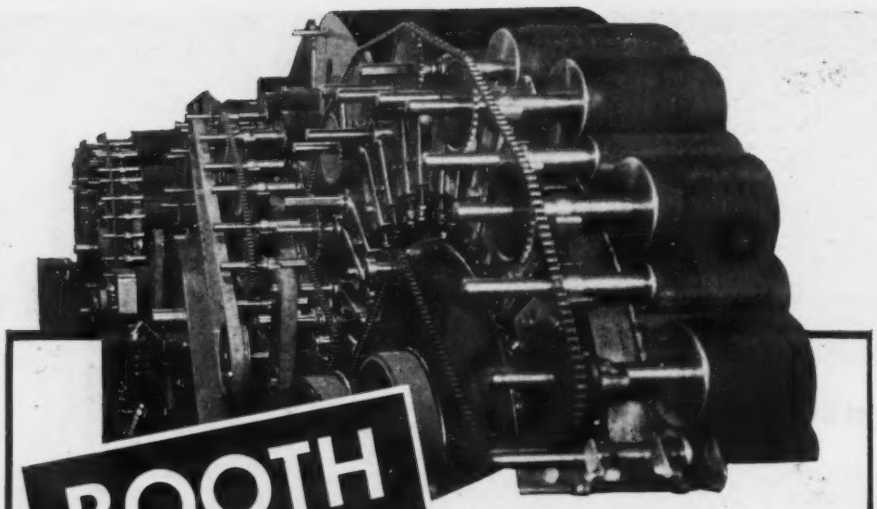


SODA ASH	CALCIUM CHLORIDE	SODIUM ZINCATES
CAUSTIC SODA	CHLORINE	AROMATIC INTERMEDIATES
BICARBONATE OF SODA	HYDROGEN	MORE THAN 100 OTHER ORGANIC
CALCIUM CARBONATE	DRY ICE	AND INORGANIC COMPOUNDS

VITAL TO VICTORY TODAY — READY TO WORK FOR A GREATER TOMORROW

Wyandotte
REG. U. S. PAT. OFF.

WYANDOTTE CHEMICALS CORPORATION
MICHIGAN ALKALI DIVISION • WYANDOTTE, MICHIGAN



BOOTH

Quality CARD CLOTHING

High-grade carders merit the best card clothing. All BOOTH card clothing has a firm fabric or leather foundation yet is fully flexible, which reduces the possibility of shelling out. It is available with rehardened points.

Write for full information and prices on the many items in BOOTH'S complete line.

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Capital Without Risk

● There is no reason why you should endure credit losses. When we factor your sales, we assume the credit risks—and you are freed from the burden of bad debts. Nor is that all. We also provide you with adequate working capital at all times. You can step up your turnover and increase your profits. We will gladly send you the details, without any obligation on your part.

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FACTORING FOUNDED ON SERVICE

the Quartermaster General has developed maps, charts, and formulas which will predetermine the design and thickness of clothing necessary to protect soldiers in any specified geographical area. A unit known as the "clo" has been set up to measure the thickness of clothing required for a man at a certain temperature while expending a given number of kilogram-calories per square meter per hour.

Tire-Cord Situation. High-tenacity rayon tire-cord output will have to be stepped up in the last quarter of the year by at least 85% over the June rate. This can be done only by expansion of facilities, and WPB reports that expansion is proceeding according to schedule. Needs can be met if additional manpower is forthcoming when the expanded plants are ready, WPB believes. The picture in the cotton tire-cord industry is more complex. There was a lag between production of cotton cord and ability of the tire-building industry to use it up. In July, WPB estimated that supplies of cord and fabric were "comfortable"—75 days' supply in the stockpile. In fact, cord production is running so far ahead of consumption in the tire industry that some facilities are being released to meet the stepped-up war demands for cotton duck. Yet, says WMC, the over-all cotton tire-cord manpower outlook is not particularly good.

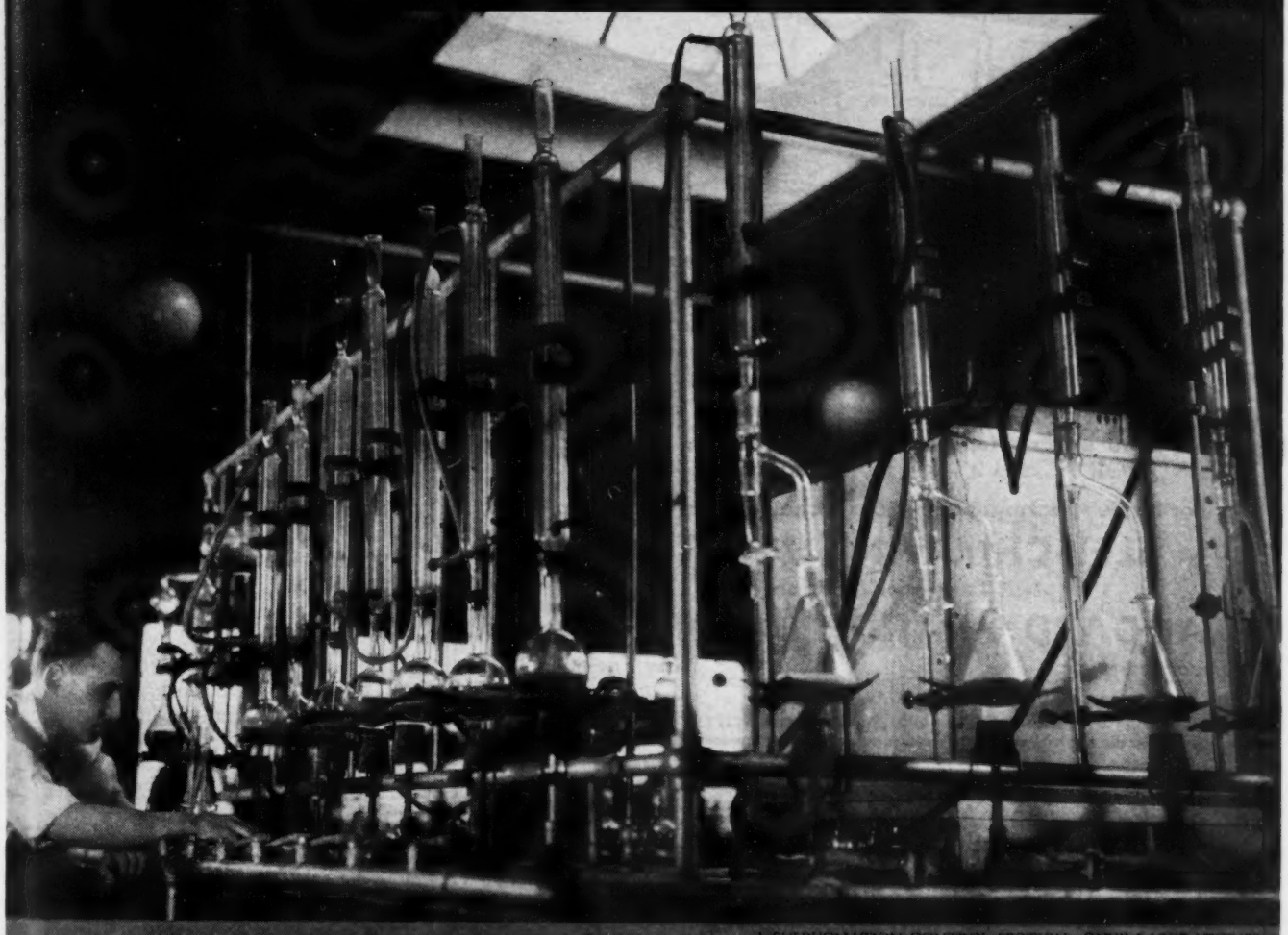
Improvements Speeded Up. Improvements in cotton-textiles achieved in last five years might otherwise, in normal times, have been 25 years on the way, said Charles K. Everett, merchandising director, of the Cotton-Textile Institute, at the Eighteenth Annual Sales Conference of the National Industrial Stores Association at New York on Aug. 30.

New Filling Material. A new filling material, Typha, is being processed from the fluff in the spikes of the common swamp cattail. This development, started nearly ten years ago by Dr. C. F. Burgess, was crystallized into a commercial enterprise by the Burgess-Manning Co., Chicago, as the result of military need for a buoyant, fluffy, and water-resistant filler.

China Prepares to Serve U. S. with Raw Silk. The International Silk Guild, Paolino Gerli, president, gave a dinner last month in honor of Dr. H. H. Kung, Minister of Finance of China, at which it was stated that China will be the mainstay of the American silk supply after the war.

Merchandising Studies. The Cotton-Textile Institute is preparing two reports on merchandising which will be

ONYX



A SULPHONATION CONTROL SECTION—ONYX LABORATORIES

SULPHONATION

For more than thirty (30) years we have been leaders in the development and manufacture of sulphonated products for the textile and allied industries. Extensive research enables us to successfully apply many methods of sulphonation to produce finishing and processing oils, detergents, wetting and emulsifying agents and a great variety of specialized products. Your inquiries are solicited.

ONYX OIL & CHEMICAL COMPANY

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CHARLOTTE · PROVIDENCE · CHICAGO · LOS ANGELES · MONTREAL · TORONTO

DIASTAFOR de-sizing agent has won for itself a record of championship that has no equal in its field. Its high quality, uniformity and performance have made it the leader for 36 years.

Cottons, mixed goods, rayons—whatever the fabric, you can depend on DIASTAFOR for smooth, supple, flawless results. Chemists and mill owners the country over know that when they de-size with DIASTAFOR, their materials will pass even the most critical tests 100%.

If you're looking for perfection—remember, there's only one DIASTAFOR . . . and it's still the champion.

For further information, ask our technical man or write to—

FLEISCHMANN'S DIASTAFOR
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DIASTAFOR *36 Years of Satisfactory Results*

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SERVICE

Make use of our experienced representatives in these days of help shortage.

Now is the time to prove that Sterling Travelers are "tops".

Southern Representatives
GEORGE W. WALKER, Box 1894, Greenville, S. C.
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SOUTHWEST SUPPLY CO., Box 1487, Dallas, Texas

STERLING RING TRAVELER CO.
FALL RIVER, MASS.

distributed to members before the annual meeting in October. One will cover peacetime possibilities of certain war-use cottons; the other, cottons in passenger transportation equipment.

Bright Postwar Outlook. A relatively easy transition from war to peace-time operations in the textile, garment and allied industries, together with potentialities of a peace-time turnover of textiles and textile products exceeding by a considerable margin that of the pre-war years, was forecast by W. Ray Bell, president of the Association of Cotton-Textile Merchants of New York, in a discussion at the War and Post-War Conference of the Associated Garment Manufacturers and Supplies at Chicago, Aug. 17.

Hosiery Directive. WPB has directed hosiery knitters to devote at least 60% of their 200 and 220-needle production on 3½ or 3¾-inch machines, between Sept. 10 and Dec. 10, 1944, to fill military orders for mercerized cotton hosiery; also 80% of 156 to 188-needle, 3½ or 3¾-inch machines, to military lightweight wool socks.

Library Service. Institute of Textile Technology, Charlottesville, Va., has adopted a program of library service to the cotton-textile industry.

Contract Termination. The National Knitted Outerwear Association held a meeting in New York, Sept. 12, to hear Maj. T. J. Godfrey, of Philadelphia QM Depot, discuss contract termination methods and procedures.

Window-Screen Fabrics. Patents Nos. 2,353,224 and 2,353,225 have been granted Dr. Camille Dreyfus, Celanese Corp. of America, relating to window screens made of an open-mesh fabric and an open-mesh fabric bound together with a compatible compound such as ethyl cellulose.

TEXTILE CALENDAR

Southern Combed Yarn Spinners Association, annual meeting, Charlotte Hotel, Charlotte, N. C., Sept. 22, 1944.

Industrial Fiber Society, fall meeting, Calloway Auditorium, La Grange, Ga., Sept. 22 and 23, 1944.

Southern Hosiery Manufacturers Association, Annual Meeting, Hotel Roanoke, Va., Sept. 22 and 23, 1944.

National Association of Cotton Manufacturers, annual meeting, Copley Plaza Hotel, Boston, Oct. 5, 1944.

Southern Textile Association, Charlotte, N. C., Oct. 7, 1944.

American Association of Textile Chemists & Colorists, Annual Convention, Claridge Hotel, Atlantic City, N. J., Oct. 12 and 14.

American Society for Testing Materials, fall meeting, Park-Central Hotel, New York, N. Y., Oct. 18 to 20, 1944.

Have you tried Olate for COLD SCOURING ?

Cold Scouring is regular practice with many processors of woolens and worsteds. Today, when fuel conservation is so vitally important, this time-tested process deserves the consideration of processors who never before have made use of it.

Much of your success with cold scouring will depend upon the soap you use. The widespread use of Olate for this operation is sound evidence that it has the necessary qualifications for scouring at low temperatures. Here's why:

OLATE SOLUTIONS STAY FLUID - EVEN AT 50° F.

Naturally, your soap solution must be unusually fluid in order to assure quick, thorough, even penetration of the fabric at low temperatures. Olate solutions stay fluid at temperatures as low as 50° F. Stay fluid, too, in high concentrations. Solutions containing as much as 12 ounces of Olate per gallon can be poured or piped readily.

OLATE SOLUTIONS INCORPORATE SOLVENTS READILY

It's easy to incorporate most solvents in your Olate scouring solution—another important advantage you get in using this pure, neutral, low titer soap.

OLATE RINSES FREELY

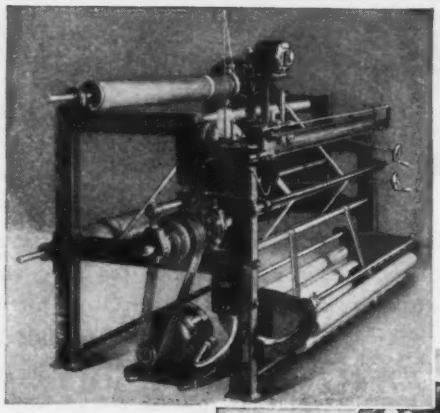
You'll see what an efficient cold scouring job Olate does the first time you try it. You'll discover another Olate advantage that's almost as important. You'll discover how easily Olate can be rinsed from scoured fabrics. And that's a big factor of safety in protecting your woolens and worsteds against the danger of objectionable odors from unrinsed soap left in the fibers.

•

If you're now using the cold scouring process—or if you are considering it—try Olate. From every standpoint—efficiency, economy, and the salability of your finished goods—there's no finer soap on the market.

Procter & Gamble

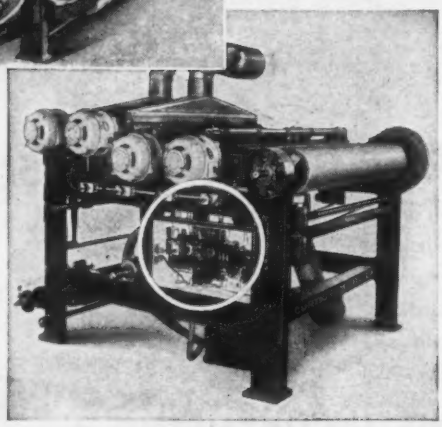
Olate *the universal textile soap*



DUPLEX SEWING and WINDING MACHINE

For use with CMR Shear in handling Rayons

A high production machine for making up and supplying an automatic shear with rolls of rayon up to 38" diameter. Where a scray is impractical because of the danger of wrinkles, this latest model duplex machine is used.



CMR SHEAR

with new Electronic Control for Rayons and Cottons

The automatic seam guard gives complete full width protection. When a seam comes along the individual motors instantly reverse and run in the opposite direction (as in back-grinding) until the seam passes; immediately resuming full speed rotation in the cutting direction.

Curtis & Marble
MACHINE COMPANY
WORCESTER, MASSACHUSETTS.

R.D. COLE QUALITY

TANKS
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MARITIME "M" MERIT AWARD

Tank Builders for over 80 Years

R. D. COLE MFG. CO.
Established 1854
NEWNAN, GEORGIA

Mercerizing—An Idea That Became an Industry

(Continued from page 147)

warp mercerizer to do the mercerizing economically. Such adjustments can be made much more easily on a skein mercerizer. Tension can be increased for a good quality; it can be slackened for a poor quality. The hot-water wash can also be adjusted by raising the temperature for strong and hard-twisted yarns and by lowering the temperature for weaker and softer yarns.

A skein-mercerizer can easily change his machine four or five times in one day without losing too much production, whereas a warp-mercerizer wants to set his machine one certain way and then run for at least a full day—or, better still, for two or three days—without having to make any adjustments.

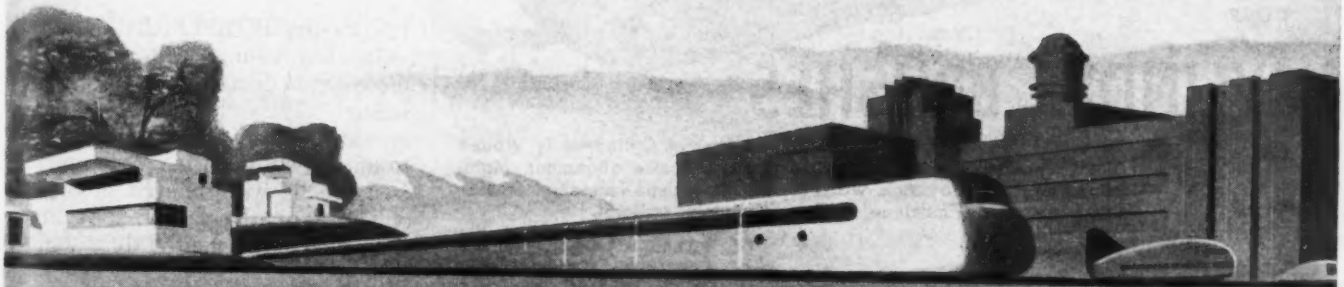
PIECE-GOODS MERCERIZING. As far as piece-goods mercerizing is concerned in England, the Mather and Platt chain machine is still the one used most generally. The perfect setup is to have two impregnating mangles. The cloth passes through the first, gets thoroughly saturated, the excess caustic soda is squeezed out, and it then travels over a set of cylinders into the second mangle. This distance can be used to give the cloth adequate length tension, producing maximum luster of the warp threads. The cloth then travels through the second mangle, where it is again thoroughly penetrated with caustic soda, either of the same strength or of a slightly higher strength than in the first mangle. After squeezing, the cloth travels over the frame and the width tension is adjusted according to the gray width of the piece.

The first spray pipe should be placed in such a way that the cloth has traveled at least a short distance while stretched to the fullest extent. As much caustic soda as possible should be washed out on the frame while the pieces are still under tension. A 90-ft. frame is considered very satisfactory. The goods should, upon leaving the frame, enter either a hot water wash in an open box or a steam recuperator. Following the hot wash, there should be one or two cold washes and, if necessary, one tank with a weak acid solution.

It is found that wherever washing can be done with a plentiful supply of water, there is no necessity for using acid. During recent years, a number of chainless machines have been installed. They are made by Sir

Compounded Latex and Dispersions

for Coating, Saturating and Bonding Fibrous Materials



Naugatuck Chemical

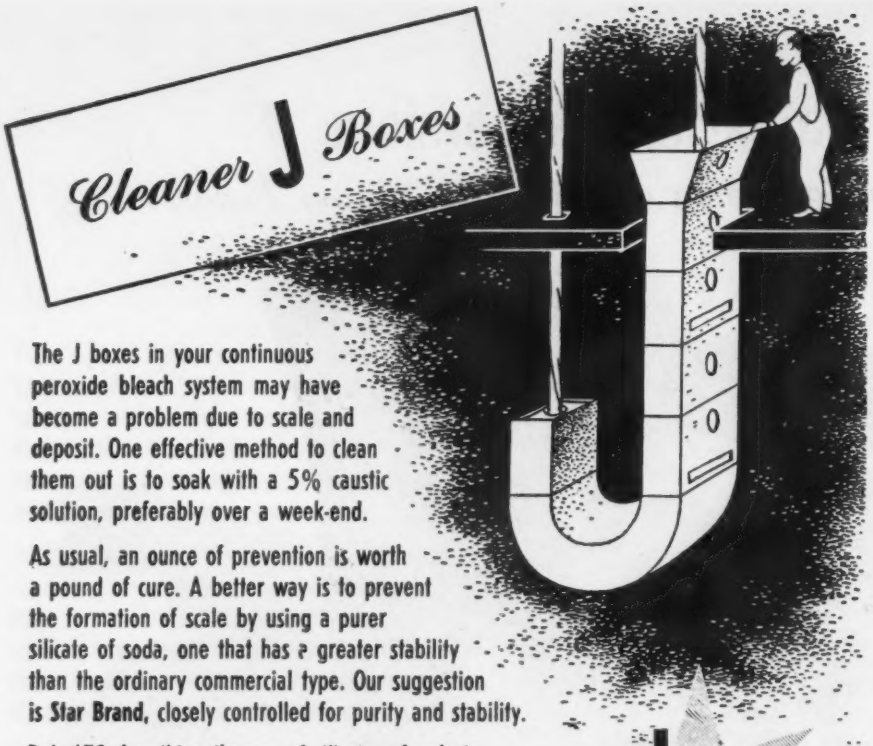
DIVISION OF UNITED STATES RUBBER COMPANY

Dispersions Process, Inc.

UNDER MANAGEMENT UNITED STATES RUBBER COMPANY

1230 SIXTH AVENUE, NEW YORK 20, N. Y.

In Canada: DOMINION RUBBER COMPANY, LTD., MONTREAL



The J boxes in your continuous peroxide bleach system may have become a problem due to scale and deposit. One effective method to clean them out is to soak with a 5% caustic solution, preferably over a week-end.

As usual, an ounce of prevention is worth a pound of cure. A better way is to prevent the formation of scale by using a purer silicate of soda, one that has a greater stability than the ordinary commercial type. Our suggestion is Star Brand, closely controlled for purity and stability.

Bul. 178 describing the use of silicates of soda in various textile processes is yours on request.

PQ SILICATES OF SODA

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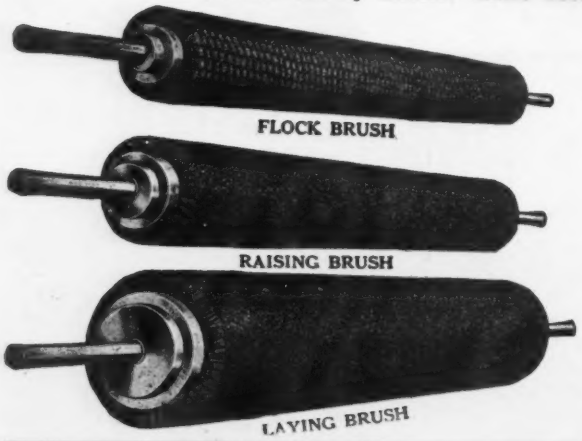

Jenkins Brushes are REFILLABLE. Worn bristles renewable. Metal core can be rewound, brush made EQUAL TO NEW. This great economy often decides mills to "standardize on Jenkins Brushes". We will be pleased to give you worthwhile advice, based on our long experience, regarding their use on your machines.

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James Farmer Norton in England and are based on the same principle as the Swiss Benninger. Here the cloth is impregnated in the same way as described already, but then instead of being stretched on a frame, it travels over a series of expanding rollers—the first six of which are dry, whereas the last six or eight are immersed in hot water. The neutralizing afterwards is again carried out the same way as on the chain machine.

It is a difficult matter to state which type of machine is the more satisfactory. Probably, the chain machine is more suitable for heavy goods, whereas a chainless machine is very suitable for lighter weights. When it comes to mercerizing voiles or other fabrics, the chainless machine offers the great advantage of allowing the processing of two, or sometimes even three, pieces at the same time. It is, therefore, primarily a question of the type of goods as to which machine is more advantageous.

UNEVEN MERCERIZING. Every mercerizer wants to be sure that his production is uniform. The first consideration is to obtain uniform results, and the second consideration is to have these results of as high a standard as possible.

It is probably better to sacrifice a small amount in the quantity to be sure that the results are consistent. There is no reliable method by which unevenly mercerized goods can be corrected (this applies both to yarns and pieces). Many factors can lead to uneven mercerizing. The most important ones are mentioned below and an endeavor is made to suggest how they can be avoided:

NON-UNIFORM PREPARATION—In kier-boiling cotton yarns or piece goods, there is a danger of channeling. This channeling must be avoided as much as possible as it leads to uneven absorbency. When mercerized, goods with uneven absorbency will take up the caustic soda irregularly and subsequently show unlevel dyeings.

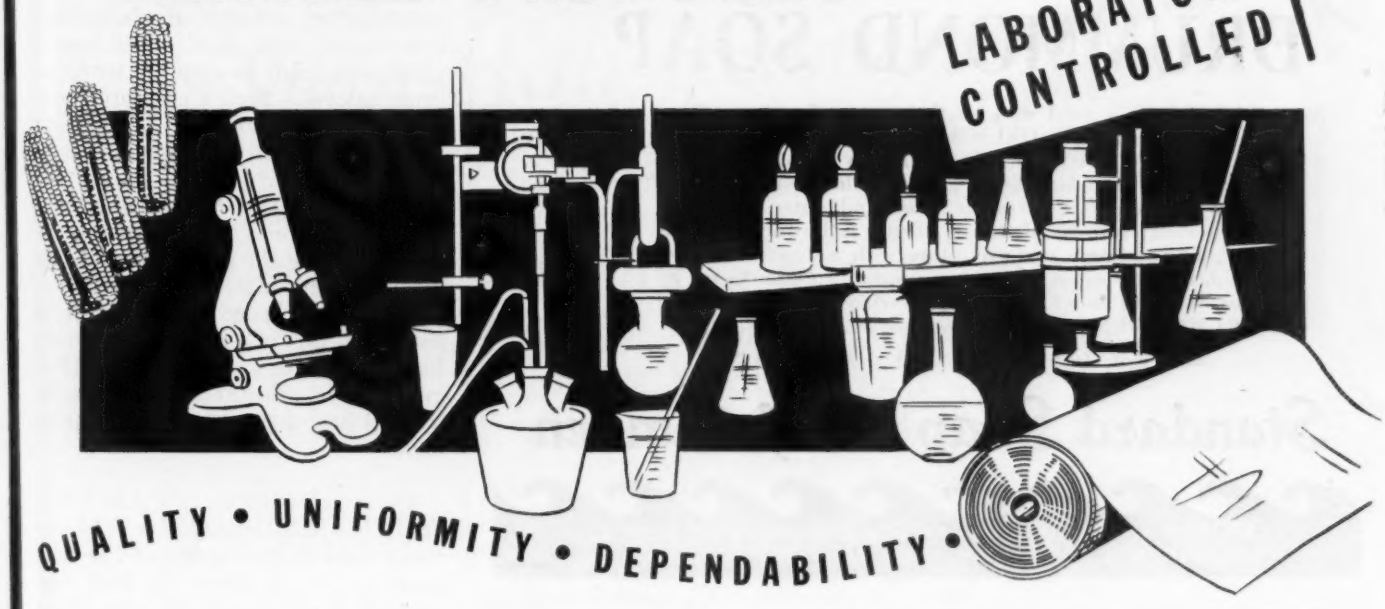
In the case of piece goods mercerized before boiling, care must be taken to desize completely, because size left in the goods will act as a resist in mercerizing, and this again leads to irregularities in dyeing.

FLUCTUATION IN STRENGTH OF CAUSTIC SOLUTION—Unevenness can occur during impregnation in the mercerizing machine, as a result of fluctuation in strength of caustic soda. There should never be a greater fluctuation than 5° Tw. The

STALEY'S

TEXTILE STARCHES

100% LABORATORY CONTROLLED



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By DONALD A. LAIRD *and* ELEANOR C. LAIRD

Read what—

EUGENE G. GRACE, who became president of Bethlehem Steel at thirty-seven, says about observation;

WALTER A. GIFFORD, who became president of A. T. & T. at forty, says about listening to opinions;

CHARLES E. WILSON, self-made president of General Electric, says about wanting to get ahead;

WALTER D. FULLER, who advanced from selling copies of the *Saturday Evening Post* to presidency of the Curtis Publishing Co., says about Big Ideas to get ahead;

LOUIS RUTHENBURG, who became president of Servel at forty-six, says about the spirit of work.

The observations of these and many other important men of industry lend concrete evidence to back up the soundness of Dr. Laird's book. The book gives seasoned, practical advice on the technique of handling people and shows in quickly understandable fashion how to use the psychology of leadership.

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This readable, practical manual presents 11 pointers on what to do and say in your everyday contacts with others, in order to win their friendship, good-will, and cooperation. The methods are clearly demonstrated in numerous stories of real people, outstanding leaders, of today, and together form a direct, easy-to-understand, easy-to-use technique for improving your relations with others and especially for securing better results in training, directing, supervising, and other elements of successful leadership.

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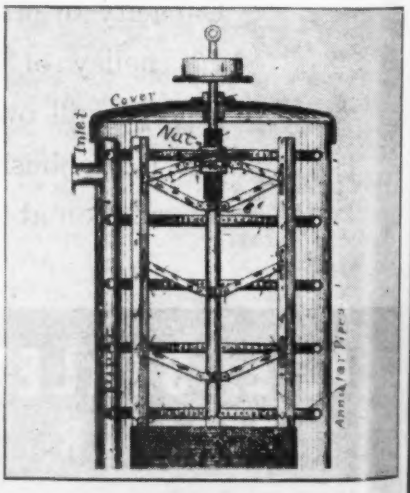
best method of keeping the caustic-soda liquor at a constant strength is to arrange for a large volume of circulating liquor. This liquor can be kept in a tank from which it flows into the pad or padders, as the case may be, and is continuously pumped back into the central tank. Feeding with strong caustic is done by adding the required strength caustic soda to the central tank to keep the strength at the desired degree—50° Tw. Continuous circulation of a large volume of mercerizing lye reduces weakening. The impregnating mangles are being fed continuously with standardized liquor, which also tends to keep the temperature constant. Such a circulating system is advantageous for mercerizing warps, skeins, and piece goods.

VARIATION IN TENSION—There should never be any change in tension during the mercerizing of one certain order. If the tension is increased or slackened, it will result in the production of a higher and a lower luster respectively. Due to the difference in light reflection, the subsequent dyeings will have a skittery appearance.

CONSISTENT WASHING AFTER MERCERIZING—The volume of water employed and the temperature should always be kept constant. It is of especial importance that the temperature of the hot wash should always be the same. In the case of the cold wash, this is less important.

The ideal washing arrangements are such that the warps or the pieces are neutralized completely before they leave the washing compartments of the mercerizing range. Such complete washing can never be carried out on a skein mercerizer. For this reason, it is advisable for the skein-mercerizer to have his hot wash and cold wash uni-



Another type of early yarn mercerizing machine shown in* TEXTILE WORLD *in 1898.

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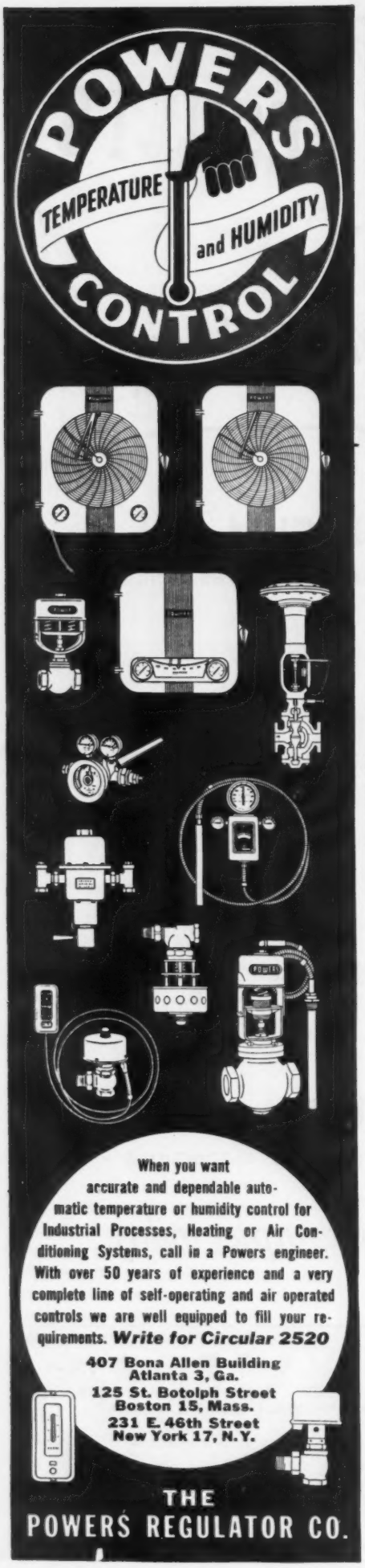
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form and to arrange for the goods to be completely neutralized in as short a period after mercerizing as possible.

In conjunction with regularity of mercerizing, a few remarks should be made as to the difference between mercerizing before or after kier boiling.

The general experience has been that goods mercerized in the gray (before boiling out) show a fuller hand and greater tensile strength. Furthermore, it is possible to speed up production. By using a reliable wetting-out agent, the results are more uniform.

When mercerizing after boiling out, the caustic-soda liquors stay cleaner. However, the hand of the mercerized goods is thinner and the tensile strength is lower, taking into consideration all the factors mentioned under tensile strength.

●

The Dyer Handles Hosiery

(*Continued from page 159*)

either in the straight formulas or for shading purposes, as they tend to "jump on" the cuprammonium rayon too heavily both at high and low temperatures.

Dyers have found that (1) using dyeing assistants possessing high solvent and dispersing actions on the dyes in the bath and (2) reducing the common salt or Glauber salt to a minimum help to obtain a better union. Also, a more uniform shade is obtained throughout a dye lot, and dyeings from lot to lot are more uniform.

Acetate colors are suitable for (1) acetate-rayon and mercerized-cotton hose; (2) acetate and cuprammonium hose; and (3) acetate, cuprammonium, and viscose hose. Direct-dyeing acetate colors to be satisfactory must exhaust uniformly from lot to lot at 150–170° F. Too-rapid exhaustion is not good. Experience has shown that the best results are obtained on acetate colors that are not likely to stain mercerized cotton and cuprammonium or viscose rayon. Colors like Acetate Yellow G, Acetate Bright Blue B, and Acetate Red VIII are used.

PREVENTING TIGER STRIPES. To prevent tiger stripes, it has been found best to cut the time of prescouring and dyeing baths, to keep the baths free of alkalies and soaps, and to have the pH not over 9. The dyeing bath should be used at 180°–190° F., or lower, if possible. Selecting low-temperature-exhausting cotton colors is found best for good union dyeing.

PREBOARDING. Some dyers feel that preboarding is necessary to obtain well-finished acetate hose. Others state that by careful handling, preboarding can be eliminated. Dyers agree that if acetate hose has been preboarded, the dyebath must be kept at 160°–170° F.; otherwise the entire benefit of preboarding is lost.

Wrinkles in hosiery are prone to appear when dyeing temperatures run over 170° F. Higher temperatures are also very likely to affect the acetate yarn properties. Wrinkles can be caused by the extractor if run at too high speed. Less wrinkles are likely at extractor speeds of not over 200 r. p. m. Also, the types of form and the methods used for boarding women's hosiery can cause wrinkles.

Type of form and method of boarding are especially important for avoiding wrinkles in acetate hosiery.

●

To Help Veterans Start Businesses

Believing that in most American communities after the war there will be an opportunity for ambitious men to start small businesses of their own, the *Reader's Digest* announces in its July issue an offer of $25,000 in prizes "for ideas for little businesses for returning veterans." The offer is made in the belief that after the war thousands of former service men and demobilized war workers will want to establish small enterprises of their own. The contest will serve as a clearing house for unusual and practical new ideas.

How to pick a winner!

Tips on choosing the right soap for each principal wet-finishing need!

laying a "hunch" will only buy you trouble in Wet Finishg. For here success depends chiefly upon your choosing e right soap for each job. That's why Armour suggests on is page how you can pick the top-performing soap for each f your three basic textile needs.

ulling of Worsteds and Woolens. This is the spot for a w-titered soap that penetrates quickly, rinses freely. You ed a soap like Armour's *Certified* that loosens dirt instantly, en holds it in suspension 'til it can be flushed away. For *rtified* is a vegetable fatty acid base soap of medium low ter. And you can get it in either flakes or solid form.

otton and Rayon Cloth Scouring. For after scouring you nt a high-titer soap that knocks out scum, throwing oils d weaving compounds, yet rinses speedily. Try Armour's *nt*. That guaranteed titer of 41-42° assures you active suds desired heat. And free-rinsing *Flint* penetrates instantly. mes in chip or powder form.

Raw Wool Scouring. Because grease-laden fibres are delicate and sensitive this type of work requires unusual care. A thrifty soap like Armour's *Certified* will leave the raw wool fibres *soft*. You'll like the quick way it slaps out the grease and soil—the way it rinses promptly in warm water. For *Certified* is an economical medium low-titer soap offered in a convenient flake or solid form.

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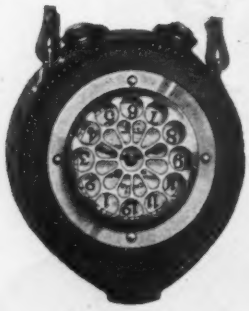

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MANUFACTURERS' BULLETINS

READERS interested in literature reviewed on this page may secure copies with time-saving coupon on page 228. Mark what you want on it and send it to Textile World, 330 West 42nd St., New York 18, N. Y., being sure to give your name and company connection.

1. Textile chemists and those connected with the dyeing and finishing industry will find two technical bulletins recently issued by Calco Chemical Div., American Cyanamid Co. of interest. The first, No. 757 entitled, "Microscopial Observations of Wool Dyeing," deals with a quantitative study of the effect of time and temperature upon the levelness of wool fiber. The second, No. 724 entitled, "Identification of Organic Pigments by Spectrophotometric Curve Shape," contains information about the identification of organic pigments by their characteristic absorption curve.

2. A survey of consumer experiences with textiles is covered in a special report that has been issued by Good Housekeeping Institute. This survey report covers mostly items of clothing and household fabrics and indicates that fading, bleeding and shrinkage are among the outstanding difficulties experienced with fabrics, and that rayon is the fabric reported as giving the most trouble. General wearing qualities are covered and also a section of the survey is devoted to analyzing buying habits in respect to labeling, advertising, etc. Textile-mill officials will find this survey of consumer reaction helpful.

3. "Do you Know These Important Facts About Cotton?," is the title of a booklet, being offered by The Cotton-Textile Institute, dealing in a general manner with such matters as production, finishes and dyes, usage, and style points on work garments.

4. Armstrong cork cots are discussed in an article entitled, "For Tomorrow and Its Needs," appearing in the *Armstrong Reporter*, for July, and published by Armstrong Cork Co. This article discusses the history of the seamless cork cot, points out the part that it is playing in the present war-effort and indicates their uses in various textile manufacturing operations.

5. "Processing Staple Fibers," is the title of the first of a series of articles which made its initial appearance in the May issue of *Saco-Lowell Bulletin*, published by Saco-Lowell Shops. Included in this article are several cotton opening and picking-room arrangements for handling synthetic fiber, and an extensive chapter on the opening, blending, and lap making processes. Other articles of interest cover a discussion of twist, and another the Z drafting system for handling 3 in. staple.

6. Beach gray, a fabric color that is showing great importance in resort wear and for men's sportswear, is discussed in the August issue of *Mallinson's Men's Wear News*, published by Mallinson Fabric Corp. A swatch showing this new color is attached to the publication.

7. Polyethylene, a new plastic with many unusual properties, is described in the July issue of *Bakelite Review*, published by Bakelite Corp. This plastic has been extruded in monofilament form and also has been used for coatings. Aside from describing many of its uses, properties of polyethylene compound are listed.

8. Cottonleather, a substitution for rubber is discussed in a folder being offered by Southern Friction Materials Co. Physical properties, standard sizes, finishes, colors, density and other pertinent information are given, along with suggested uses such as for slasher friction, loom clutch facings, loom binders, etc.

9. Good housekeeping in a twister room is graphically described in an article entitled, "It Can Happen In Any Mill—Today," appearing in the July issue of *The Traveler*, published by Victor Rin Traveler Co. Mill-men will be interested in reading this article as it should provide the solution to why production has fallen off in some cotton mills.

10. "New England's Cotton Textile Future," is the title of an article appearing in the June-July issue of *New England War Bulletin*, published by the New England Council. This is the first of a series of authoritative statements concerning the present situation and postwar prospects of important industrial groups in New England.

11. Camouflage cloth, its importance and how it is protected by various chemical solutions, is discussed in the July issue of *Monsanto Magazine*, published by Monsanto Chemical Co. Textile mill-men also will be interested in another article in th

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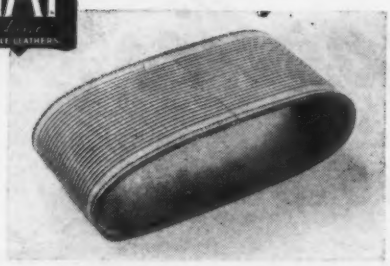

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same issue discussing cotton, burlap and other types of fabric bags.

12. "Nitrocellulose — Properties and Uses," is the title of a 64-page textbook offered by Hercules Powder Co. This textbook covers the properties and uses of soluble nitrocellulose as a base for plastics, lacquers, coated textiles and many other products. Tables and charts are contained showing the various properties of nitrocellulose and also its hardness, physical properties, and a section is devoted to application and uses.

13. A new domestic corn starch is described in a booklet entitled, "Amioca," issued by National Starch Products, Inc. Physical properties, temperature and viscosity, characteristics, and clarity are covered, and charts showing moisture of various starches, as well as charts showing properties of various types of starches are included.

14. A flame-treated compound, called Flamort, is described in a folder which is being offered by Davis Emergency Equipment Co., Inc. This product can be used for treating textiles, clothing, draperies, carpets, etc. for preventing flames and afterglow.

15. "Fleet-Welding," is the title of a 48-page handbook, issued by The Lincoln Electric Co., describing a new technique of arc welding which not only increases the speed of the process over conventional welding jobs, but also cuts costs by as much as 59%.

16. "Export Market Opportunities for U. S. A. Manufacturers," is the title of a 19-page report, published by Alcoa Steamship Co., Inc. This report contains tables showing total imports within the Caribbean, Venezuela, and the Guianas areas of South America. An extensive breakdown of textile-imports is given.

17. "Eye Comfort Color Harmony," is the title of an article appearing in the June issue of *Building Maintenance*, published by Truscon Laboratories, Inc. This article deals with painting for better light so as to provide eye relief, comfort and more light reflection in the mill.

18. Mill maintenance men will be interested in a folder offered by Wodack Electric Tool Corp. which describes an electric hammer and drill combination which is suitable for drilling concrete, brick, stone, metal and wood. It hammers and bores, depending upon the attachment.

19. A flat-belt drive system is covered in a catalog FBD-44, offered by The American Pulley Co. This 24-page catalog gives complete information on steel split pulleys and bushings, shaft collars, shaft hangers and bearings, conveyor pulleys, hi-torque motor pulleys, belting, and short-center flat-belt drives.

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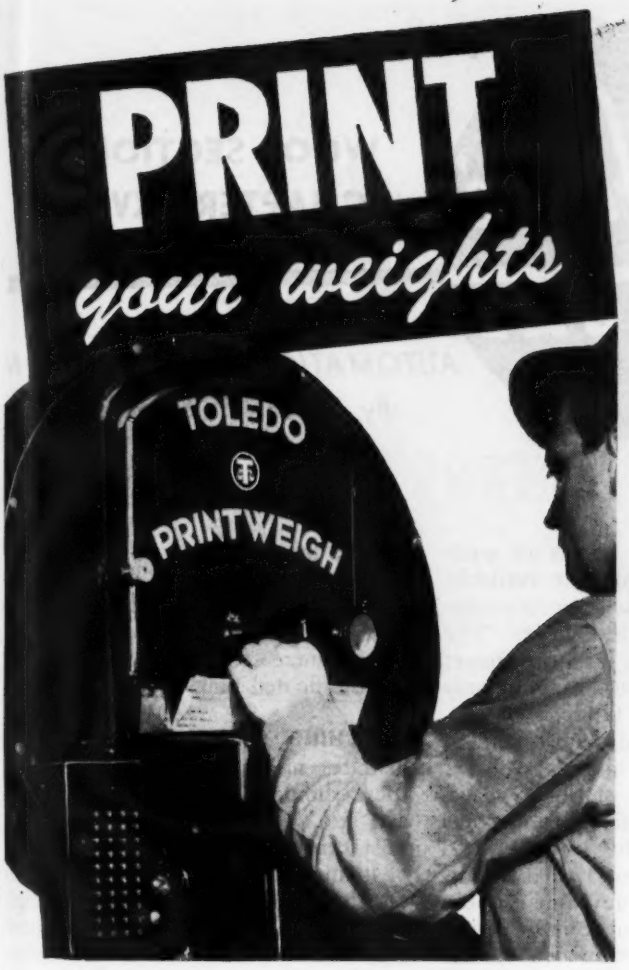

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Loomfixers' MANUAL

WOOL SECTION—CHAPTER XXVIII

AUTOMATIC FILLING MOTION

By Eugene P. Schremp

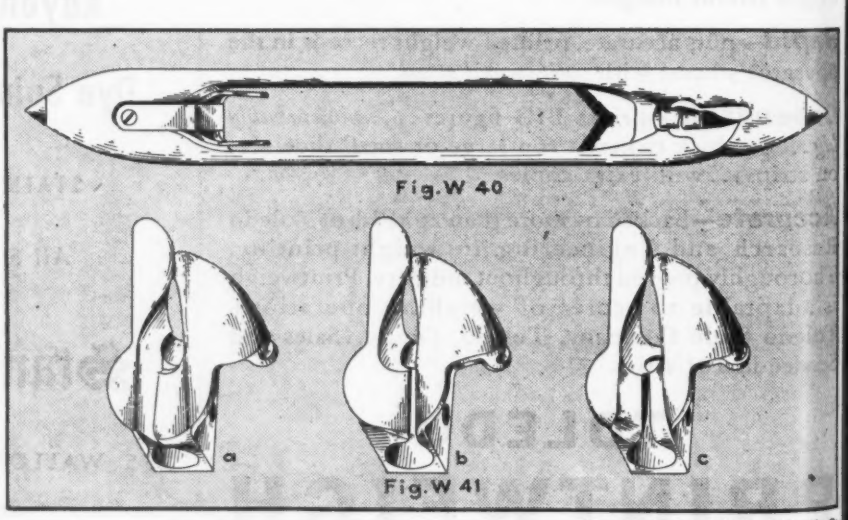
THREE DIFFERENT TYPES of automatic filling motions are available; namely, rotary battery, stationary magazine, and the shuttle changer. The rotary battery type is used on Draper looms weaving a fabric containing only one kind or color of filling.

In the repair and adjustment of the modern type of automatic 4 x 1 box, multiple-color, stationary-magazine loom, certain principles must be considered. With this type of loom there must not be less than two successive picks from any one bobbin used, because the shuttle must return to the box-cell from which it was picked. There are, however, different ways of placing a single pick or color in a fabric with a loom of this type, but the methods used are not very practical. One method is to weave a cloth double so that there is only a single pick in each side of the fabric. Trouble is usually experienced with such a fabric by the weaver being unable to see an imperfection in the underside of the fabric and also with the take-up motion. In some cases where a fabric requires a single, fancy, decorative pick, all the harnesses are lowered and the shuttle is floated across on the return pick. With this method there is increased labor cost for removing the floated pick of filling.

MATCHING SHUTTLES. Fig. W40 illustrates an automatic shuttle, and these should be matched for weight and size. Fixers should not have the mistaken idea that on the newer types of looms equipped with floating binders that it is not necessary to weigh and match the shuttle to size. A loom may run with shuttles of different sizes but the spring tension of the binder on the single-box side must be set to hold the smaller shuttle. When the larger shuttle is picked it will have trouble boxing properly. The same condition will exist when the shuttles are of different weight. The heavier shuttle will need greater binder spring tension than the lighter shuttle.

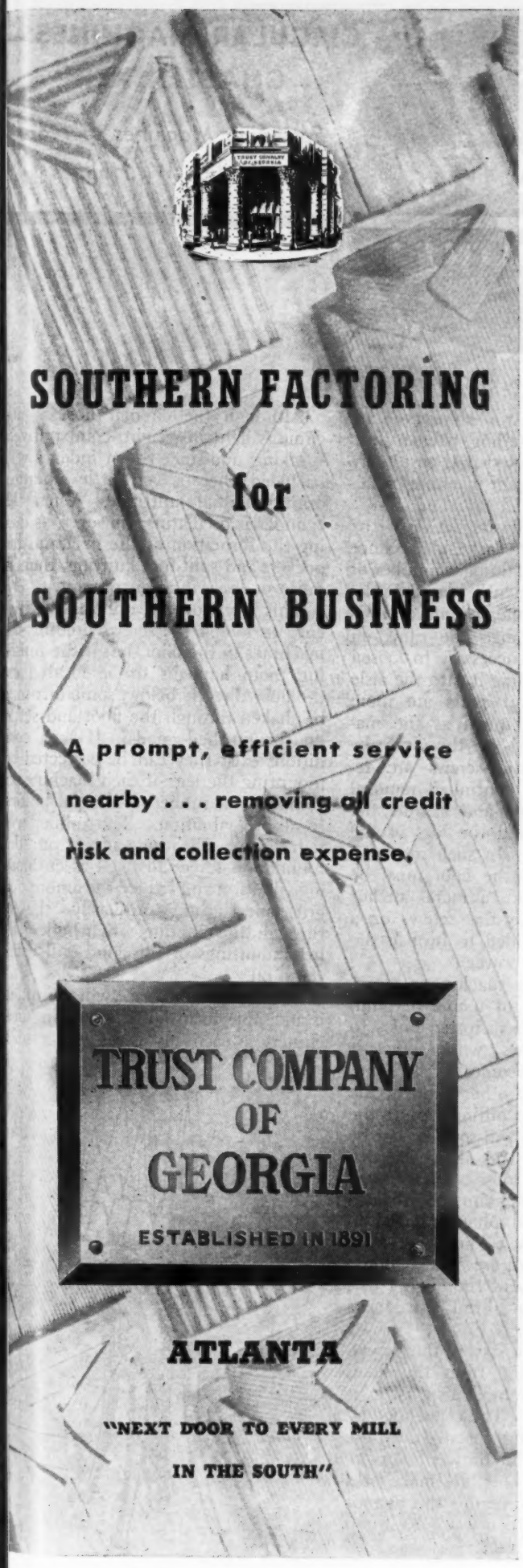
A fixer having a section of looms with shuttles not properly matched

(*Continued on page 234*)



Courtesy Watson-Williams Shuttle Co.

Fig. W40. Automatic shuttle equipped with bristles. Fig. W41. Shuttle eyes for yarns with various twists. Eye (a) is for right-twist yarn, (b) for left-twist and (c) handles yarns of either right or left twist.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- Drying sizing on warp yarn
- Preheating fabric prior to impregnating
- Dehydrating moisture from cloth
- Dehydrating velvet
- Drying glue on muslin
- Dehydrating salt solution from duck
- Drying lacquer on cotton tubing
- Dehydrating thread
- Drying wool combings
- Drying bakelite coating on parachute cloth
- Drying lacquer on shower curtains
- Predrying size on back of carpet
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FIXING Hosiery MACHINES

CIRCULAR MACHINES—CHAPTER XXII

Fastening Machines to Floor,

By Julian W. Hughes

FLOOR SPACE AND SHAFTING are saved by installing circular hosiery machines in rows. It is customary to line up two rows of machines parallel, about 30 in. apart, and run a counter shaft midway between the rows, driving from each side. Since pattern drums containing a number of cam races are frequently placed at the rear of the machine, whenever it is necessary to rearrange the cams on these drums, it is necessary to loosen the machine and drag it into the aisle where the different parts are more accessible. In as much as the machines are secured to the floor by wood-screws, if the screws are removed often, the continued removal wears away the wood, and, in time, the screws will not hold the legs of the machine in place. In such instances the screw-holes in the floor must be plugged with wood, a metal anchor inserted to receive the screw, or a vibration buffer added to furnish the necessary holding power.

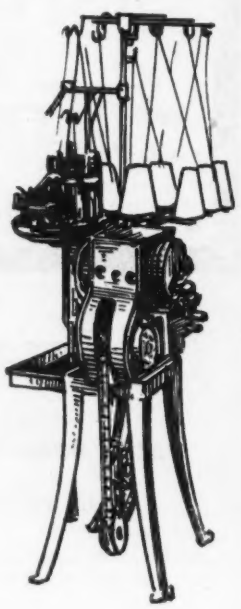
If the knitting machinery is installed on a floor of maple or gum, plugging worn and distorted holes to furnish the screws with sufficient holding power becomes of less importance. On the other hand, if the flooring consists of ordinary pine, the fibers of the wood will soon be cut by the screw-threads and allow the machinery to work loose. Under such conditions the holes must be reamed out and hardwood plugs inserted to receive the screws. The wood from which these plugs are made should be well-seasoned and thoroughly dry, otherwise they may shrink and loosen in the floor.

A better way to keep the screws from working loose from the floor, though somewhat more expensive, is by using anchors. These anchors are small metal bushings inserted into the floor with a hole in the center to receive the screw. They are made of a soft metal so as to permit the threads of a screw to cut their way into it and hold the screw in place.

Although the circular hosiery machine is light in weight, comparatively speaking, and since the cylinder is well balanced, there is very little vibration during normal knitting. When the cylinder is oscillating, however, as during the formation of the heel and toe pockets and split-foot knitting, there is more or less vibration present.

This vibration not only has a tendency to loosen the screws holding the machines to the floor, but if the finishing room happens to be located on the floor directly below, some dirt may be shaken through the floor and settle on the finished goods. If such conditions exist they can be corrected by mounting the legs of each machine on combination rubber and metal buffers to absorb vibration. The rubber will reduce the shearing affect on the foundation screws, as well as cushioning vibration and reduce the amount of grit and grime ordinarily shaken through the flooring. Synthetic rubber mountings of this kind will withstand oil.

Whenever floor space will permit, it is advisable to install the knitting machinery so each unit is easily accessible



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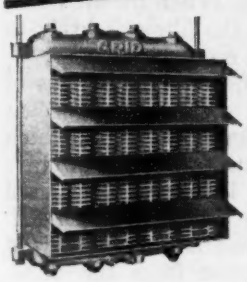

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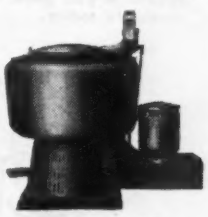

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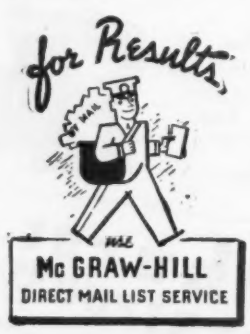

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from the rear, as well as from the work alley. This can be done by spacing the rows of machines farther apart and by driving each row by an individual counter shaft instead of two rows from a centrally mounted shafting.

The machinery is aligned so there is an alley between every row, one in back as well as in front. Each counter shaft is aligned as close to its respective machine as possible, and the two shafts are spaced far enough apart to allow plenty of room for the fixer to get at the machinery from the rear. The shafting and motors must have substantial guard rails placed about them to keep yarn trucks and operatives from running into the pulleys and belting.

An interesting feature of such an installation is the elimination of crossed belts for driving some machines. When one line of shafting drives two rows of machines, the machines on one side of the shafting must be driven by crossed belts. Inasmuch as a crossed-belt drive requires more linear feet of belting, and the belting tends to wear faster than otherwise, the open-belt drive is more desirable from a maintenance point of view. In the single-row drive, crossed belts are avoided by placing and connecting the motors so as to rotate both shafts in the same direction as machine rotation.

●

Loomfixers' Manual

(*Continued from page 230*)

will be working continually and will make very little progress. A number of mills are using shuttles with an off-set point; the advantage being that the point will be closer to the reed where the shed is larger. In this way, there is less danger of the point of the shuttle damaging the warp ends. It is also possible to use a shorter picker so that there will be greater clearance between the picker and the binder. Insufficient clearance between the binder and the picker may be the cause of filling hooking around the back of the picker. Runners and double picks could be caused by such a condition. It will cause the loom to stop unnecessarily.

Weaving departments changing from center-tip to off-set shuttles must be very careful that fixers do not mix the two in one loom. It would be extremely dangerous to try to run a loom with two types of shuttles as the points would hit the picker in a different place. This condition would surely cause the shuttle to fly out of the loom. Painting the inside of the off-set shuttles a distinguishing color will help to prevent such a mistake.

EYES. Shuttle eyes of the proper size and type are also important. It is not practical to use an eye with the same size opening for fine-count worsted as would be for a heavy woolen yarn. If the opening is too small the shuttle eye will not thread properly and the filling is likely to break. When the eye opening is too large the filling is likely to loop out of the eye.

Fig. W41 illustrates three types of eyes. The right eye (a) is used when the filling is wound to the right, which is the usual practice when the filling is rewound. The left eye (b) is used when the filling is wound to the left. Left-hand winding is usually used on bobbins that come from the mule. Some woolen mills run their filling bobbins on the mule and do not rewind, but this is not the normal method. The neutral eye (c) will thread either right or left wind and is used in mills where both kinds of winding is encountered.

●

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Among the mills recently honored by awards are the following:

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American Silk Mills, Orange, Va.—Second star for "E" pennant.

Gonic Mfg. Co., Gonic, N. H.—Third star for "E" pennant.

Lebanon Woolen Mills, Lebanon, Tenn.—Third star for "E" pennant.

Beaumont Mfg. Co., Spartanburg, S. C.—Third star for "E" pennant.

G. L. Stifel & Sons, Wheeling, W. Va.—Third star for "E" pennant.

Goodyear Decatur Mills, Decatur, Ala.,—Army-Navy "E" pennant.

Gibbs Underwear Co., Philadelphia—Army-Navy "E" pennant.

Limerick Yarn Mills, Limerick, Maine—Army-Navy "E" pennant.

Springfield Woolen Mills Co., Springfield, Tenn—Army-Navy "E" pennant.

Arlington Mills, Lawrence, Mass.—Second star for "E" pennant.

Blackstone Plush Mills, Blackstone, Mass.—First white star for "E" pennant.

Munsingwear, Inc., Minneapolis—Third white star for "E" pennant.

Lincoln Bleachery, Lonsdale, R. I.—Third star for "E" pennant.

Cyril Johnson Woolen Co., Stafford Springs, Conn.—Second white star in "E" pennant.

U. S. Rubber Co., Shelbyville, Tenn.—Second star in "E" pennant.

Swift Spinning Mills, Columbus, Ga.—First star in "E" pennant.

Pacific Mills worsted division, Lawrence, Mass.—First star in "E" pennant.

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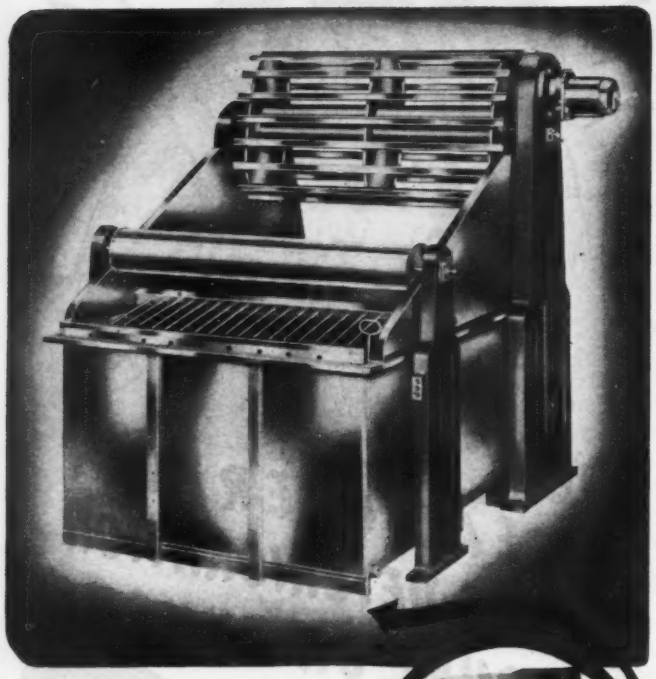

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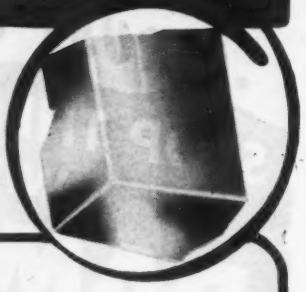

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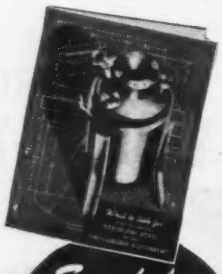

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NEWS ABOUT Suppliers

Stein, Hall & Co., Inc., New York, has elected Edwin Stein as president, succeeding the late Frank Griswold Hall. Mr. Stein is the grandson of the late Solomon Stein of Chicago, who founded the company in 1866, and the son of Leo Stein, who was president until his death in 1918. Edwin Stein has been vice-president since 1934 and executive vice-president since 1942. Morris S. Rosenthal succeeds Mr. Stein as executive vice-president, and Arthur L. Strasser becomes chairman of the board. Dr. Alexander Frieden, technical director, has been elected a vice-president. Oliver H. Clapp has also been elected a vice-president. Mr. Clapp resigned as assistant vice-president in July, 1942, and joined the Defense Supplies Corp. in Washington. He has lately resigned as an exexutive of the Foreign Economic Administration to return to Stein, Hall & Co.

Pennsylvania Salt Mfg. Co., Philadelphia, has organized an export department at its main office at 1000 Widener Building, Philadelphia. John H. S. Barr, with the company 15 years, has been appointed manager. Dr. William A. LaLande, Jr., formerly director of research of Attapulgus Clay Co., has joined the Research and Development Department of Pennsylvania Salt as director of research.

B. R. NEWCOMB, who has been elected president of the John Waldron Corp., New Brunswick, N. J. Mr. Newcomb was formerly with Worthington Pump & Machinery Corp., and more recently with American Optical Co. S. N. Finney and F. W. Egan, both long associated with the Waldron organization, have been elected vice-presidents of the corporation.

LEON P. BRICK, who has been made general sales manager of Onyx Oil & Chemical Co., Jersey City, N. J. He has been with the company for the last 18 years, much of the time as technical and sales representative in New York, Pennsylvania, and the southern states. For the last seven years, he has been located in Jersey City as assistant general sales manager.

Arthur D. Little, Inc., Cambridge, Mass., has added to its staff H. W. Christoffers, L. T. Dupree and R. B. Schneider. Mr. Christoffers was previously with Commercial Filters Corp.; Mr. Dupree with Servel, Inc., and Mr. Schneider with the central development group of Allied Chemical & Dye Corp.

National Starch Products, Inc. (National Adhesives), New York, now has 34 employees, including officers, in its Quarter Century Club, comprised of those with 25 or more years of continuous service to their credit. The company itself is celebrating its 50th anniversary this year.

Standard Mill Supply Co., Providence, R. I., has established its export department in the Empire State Building, New York, where it will offer services in connection with export inquiries and orders for

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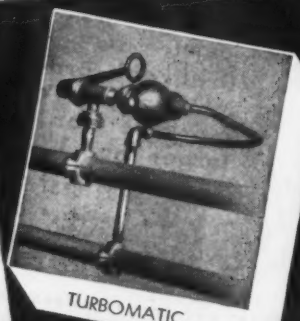

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PSYCHROSTAT

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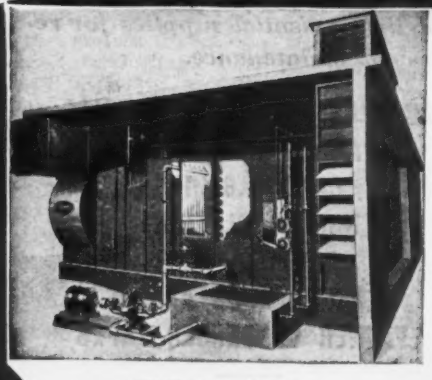

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textile machinery, accessories, and supplies.

The B. F. Goodrich Co., Akron, Ohio, has named Edward A. Willson as resident supervisor of the synthetic rubber laboratories operated by the company at Kent State University, Kent, Ohio. Mr Willson joined the research laboratories of the company in 1928.

National Carbon Co., Electrode Service Engineering Department, New York, has been reorganized and enlarged. T. L. Nelson is now in charge of the enlarged department, which will consist of two divisions. Dr. Neal J. Johnson has been named to head the department's electrolytic service division, and Dr. Charles H. Chappell is in charge of the electrothermic service division.

American Section of the Society of Chemical Industry has elected Dr. Norman A. Shepard, chemical director of American Cyanamid Co., as chairman, and Frank J. Curtis, vice president of Monsanto Chemical Co., as vice chairman, to serve until July 1945.

Hyster Co., Portland, Ore., has stimulated its employee-relations program by publishing for the members of its organization a well-illustrated book entitled "One American Business," containing information on the company and informal photographs of all employees.

United Factors Corp., New York, has elected Paul N. Robins as a vice president.

AMONG FIRMS lately receiving awards for war production are the following:

Jenkins Bros., New York—Third gold star for its "M" pennant.

Farrel-Birmingham Co., Ansonia and Derby, Conn., and Buffalo, N. Y.—Maritime "M" pennant for each of its plants.

Brown Instrument Co., Philadelphia—Second star for "E" pennant.

Westinghouse Electric & Mfg. Co., Cleveland Lighting Division —"E" award.

Foxboro Co., Foxboro, Mass.—Second star for "E" pennant.

General Electric Co., plastics plant, Pittsfield, Mass.—Second star for "E" pennant.

Cochrane Corp., Philadelphia —First star for "E" pennant.

R. B. SCHNEIDER, formerly with the central development group of Allied Chemical & Dye Corp., who is now associated with Arthur D. Little, Inc., Cambridge, Mass.

Among his duties will be the handling of new business. He has been associated with the Manufacturers Trust Co. since 1927, resigning as vice president in charge of the accounts-receivable department.

Jersey Mfg. Co., Paterson, N. J., has appointed William A. Pardue, formerly of Pabst Sales Co., to be its southern representative, with headquarters at 2721 Augusta Road, Greenville, S. C.

Fairbanks, Morse & Co., Chicago, has purchased the Pomona Pump Co., a division of Joshua Hendy Iron Works, in a $4,000,000 transaction. All physical assets, patents and trademarks of the Pomona and Westco pump lines were included in the transaction. The Pomona firm has plants in Pomona, Calif., and St. Louis, Mo. No changes in personnel are contemplated. Arnold G. Brown, general sales manager of Ponoma, becomes assistant manager of Fairbanks-Morse Pump Division in charge of Pomona and Westco products. Distribution and sales will continue under his direction.

Interchemical Corp., New York, has acquired the Standard Coated Products Corp., which now operates as Standard Coated Products Division of Interchemical Corp. There will be no change in operations or in personnel.

Kempton Parts & Spring Co., Gastonia, N. C., has appointed Textile Specialty Co., Greensboro, N. C., as exclusive representative for the "Klenoil" oilless bearing bolster for all mills in the South, and has similarly appointed

The Modern Bearings

● Advances in Sleeve Bearing design and manufacture stimulated by the war have made Sleeve Bearings successful where other types have failed. The Bunting organization has contributed valuably to this advance and Bunting Cast Bronze Bearings are more largely used today than ever before. It will pay you to investigate the suitability of Bunting Bearings in textile machinery applications.

Bunting Cast Bronze Standardized Bearings for all general machinery and electric motors of all makes and sizes are available from stock, completely finished, ready for assembly. Also Bunting Bearing Bronze Tubular and Solid Bars for your own manufacture of special bearings. Ask your wholesaler... The Bunting Brass & Bronze Company, Toledo 9, Ohio. Warehouses in Principal Cities.

● The Bunting Catalog gives complete specifications of many sizes of fully machined Bunting Cast Bronze Standardized Bearings for machine tools, general industrial machinery and electric motors. Ask for your copy.

Bunting

BRONZE BUSHINGS ☆ BEARINGS ☆ PRECISION BRONZE BARS

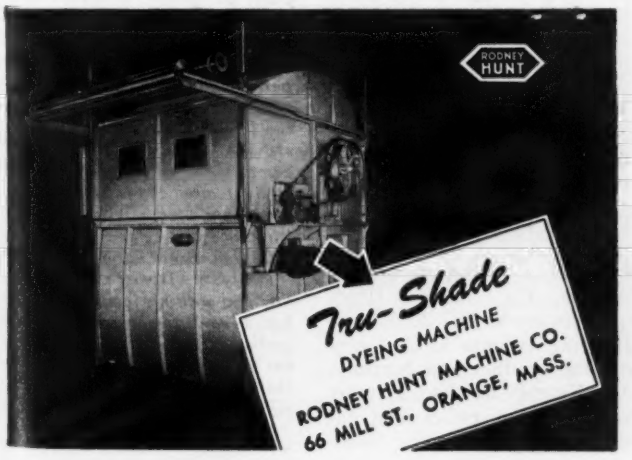
Points to remember

Buy War Bonds and

NEW BEDFORD, MASS. ALLEN COMPANY.

CONSERVE YOUR BEAMS! Keep them UNDER COVER

ALLEN COMPANY, 136 River Road
New Bedford, Mass.—So. Rep.
Mr. L. E. Wooten, Fort Mill, So. Car.



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TAUNTON, MASSACHUSETTS

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H. REID LOCKMAN, BOX 515, SPARTANBURG, S. C.

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CHEMICAL SPECIALTIES
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Our many years of experience in the manufacture of Quality Products enable us not only to meet the pressing problems of Today . . . but also to help you prepare for the requirements of tomorrow. We are pleased to place this experience and our research facilities at your disposal. Tell us how we may serve you.

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Main Office and Works:

Nevins, Butler and Baltic Streets, Brooklyn, N. Y.

Philadelphia · Chicago · Charlotte
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NEWS ABOUT SUPPLIERS

Matthews Equipment Co., Providence, R. I., for the New England states. These concerns will also handle the products of Stewart Machine Co., Inc., owned and operated by Ed S. Kempton. Textile Specialty Co., in addition to manufacturing loom reeds, also represents John Sidebotham, Inc., .of Philadelphia, manufacturers of spinning tape.

The Foxboro Co., Foxboro, Mass., has added Paul Torre to its staff of sales engineers covering the New England territory, working out of Foxboro.

Woonsocket Testing House of the United States Testing Co. is now located at new headquarters, 59 Social Street, Woonsocket, R. I. The new laboratories handle transit shipments of yarn as well as the quantity testing of woolen and worsted yarn.

General Electric Co., Bridgeport, Conn., has reorganized the Glyptal field force as follows: F. M. Hastings will be in charge of the New York area with offices at 570 Lexington Avenue, New York; C. H. Gross will handle the Atlantic seaboard district except for the New York area, with headquarters in Schenectady; P. E. Doell, in charge of the East Central district, will make his office at 1966 Woodland Avenue, Cleveland, Ohio; J. R. Reid and R. C. Reid, in charge of the Central district will have their offices at 840 South Canal Street, Chicago. The Paul W. Wood Co. of San Francisco and Los Angeles represents Glyptal on the Pacific Coast. J. E. Russell acts in a similar capacity in the states of Arkansas, Louisiana, Oklahoma and Texas.

Wheelco Instruments Co., Chicago, has elected Charles L. Saunders, former vice president of Minneapolis-Honeywell Regulator Co., to be vice president of Wheelco. Mr. Saunders recently resigned as branch chief of the WPB Office of Civilian Requirements.

Midwest Piping & Supply Co., St. Louis, Mo., has appointed O'Earl Kearney as manager of its newly created Atlanta, Ga., office. Headquarters are at 207 Red Rock Building, Atlanta 3, Ga., serving the Southeastern territory. Mr. Kearney has had 25 years experience in power and industrial piping and is well-known throughout this territory.

ROSCOE H. SMITH, who has been manager of applied engineering for Reliance Electric & Engineering Co., Cleveland, will head up the new sales promotion department, assisted by Kenneth F. Ertell, who has been named assistant advertising manager. Under the enlarged set-up, C. V. Putnam relinquishes his duties as advertising manager to Mr. Smith but will continue his executive responsibilities as secretary of the company. Richard A. Geuder, who has been manager of metal industry applications, will assume also Mr. Smith's previous responsibilities.

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has appointed A. Morton Cooper as manager of the general mill section of the industrial department. With the company for 24 years, he had been assigned in 1942 to the general mills section at East

SOCIETY OF CHEMICAL INDUSTRY, Brooklyn, N. Y., has selected Col. Bradley Dewey to receive the Chemical Industry Medal for 1944, an award made annually by the American Section of the society. It is being made to Col. Dewey for his work in colloid chemistry, especially pertaining to rubber latex, and his accomplishment in administering the synthetic rubber program during the critical war period. In 1919, in association with Charles Almy, he organized the Dewey & Almy Chemical Co. He has been president of that company since its organization. In September, 1942, Col. Dewey was appointed Deputy Rubber Director and since September 1943 has been Rubber Director. Under Col. Dewey's administration and with his leadership there has been brought into being a synthetic rubber industry which has the capacity to produce synthetic rubber at a rate greater than 1,000,000 long tons a year.

Today is tomorrow's parent

Today fathers the world just around the corner, the world in which we hope to live in kindness and security. Tomorrow our wives and sweethearts will again find joy in wearing sheer alluring hosiery; glamourous chiffons, and dainty things. She'll expect *lasting beauty* in any fabric she chooses—service and loveliness such as is always the distinctive note in fabrics *DuraBeau* finished—and there is a *DuraBeau* Finish for *every* fabric.

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Reg. U.S.A. and Canada

Scholler Bros., Inc.

Manufacturers of Textile Soaps, Softeners, Oils, Finishes
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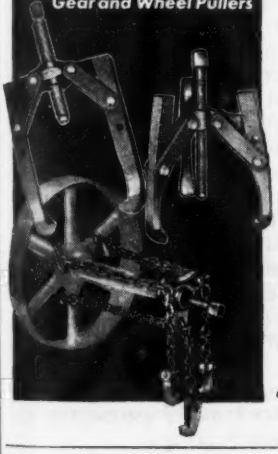
ARMSTRONG-BRAY
Gear and Wheel Pullers



Prompt Shipments from Stock

STEELGRIP Standard Rigid Arm Gear and Wheel Pullers are of improved design. Will not slip from work. Arms are forged and heat-treated. 2-arm, 3-arm and special models. 12 types and sizes. CHAINGRIP Universal Pullers pull wheels, solid gears, pinions, etc., even at considerable distance from end of shaft. Proof-tested chains have both chain hooks and special pulley hooks. 3-ton and 12-ton capacities.

Write for Catalog Sheets.

ARMSTRONG-BRAY & CO.
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5340 Northwest Highway
Chicago 30, U.S.A.

WE'VE LEARNED A LOT IN OUR 50 YEARS!

50 years of specialized experience in producing tanks and tubs for the textile industry *has taught us some things that will be valuable to you!*

Let us tell you about our complete Caldwell service, which includes Stainless Steel-lined tanks and tubs—round, rectangular and special shapes. *Catalog on request.*

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Machine and Hand Knitting

Yarns

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for

BATHING SUITS
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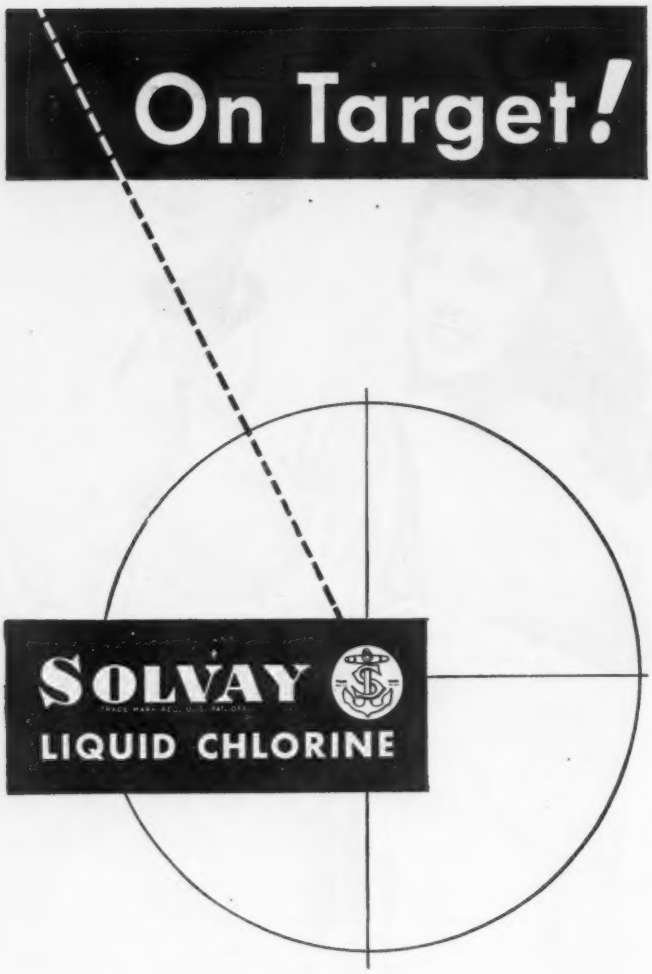
Complete color assortments

American Woolen Company

225 Fourth Avenue New York



SOLVAY Liquid Chlorine is on the target! -- helping textile manufacturers to safeguard fabrics against uneven colors and spotty bleaching.

As an effective bleaching agent and water conditioner, SOLVAY Liquid Chlorine is recognized for its controlled quality, highest standards of purity, and dependable uniformity...your assurance of satisfaction and performance.

SOLVAY SALES CORPORATION

Alkalies and Chemical Products Manufactured by The Solvay Process Company

40 RECTOR STREET **NEW YORK 6, N. Y.**

BRANCH SALES OFFICES:

Boston	Cincinnati	New Orleans	Pittsburgh
Charlotte	Cleveland	New York	St. Louis
Chicago	Detroit	Philadelphia	Syracuse

Pittsburgh handling paper, textiles, rubber, leather, lumber, food, etc. The Westinghouse Switchgear and Control Division has promoted Maurice H. Hobbs, manager of Switchboard Engineering, to manager of Engineering Dept. of the Division; Charles P. West, section engineer in Switchboard Engineering to manager of Switchboard Engineering, and Wilbur C. Fulton, switchboard engineer, to section engineer in Switchboard Engineering. Harry A. Kinley, affiliated with the Westinghouse Lamp Division for 34 years, has been appointed manager of its district office at Detroit, Mich. Mr. Kinley's territory embraces most of Michigan and northwestern Ohio, including Toledo and Lima. Harry S. Walker, a member of the commercial engineering staff at the Bloomfield Lamp Division, has been made a sales representative on Mr. Kinley's staff.

Hercules Powder Co., Wilmington, Del., has named Clark B. Kingery, lately assistant manager of the company's Parlin, N. J., chemical plant, to be manager of the Cellulose Products Department plant just established at Hopewell, Va. W. Ernest Henry will continue as manager of the chemical cotton plant at the same location. Hercules is offering an all-color, sound movie telling the interesting life story of the cellulose plastics family, titled "Careers for Cellulose." The film traces the story of cellulose from the cotton fields of the South, and shows technical details of the manufacture of cellulose, cellulose acetate, nitrocellulose, and ethyl cellulose, bases for plastics, lacquers, film, rayon, etc. Scenes were filmed in Hercules chemical plants at Hopewell, Va., and Parlin, N. J.

Sylvania Electric Products, Inc., New York, has named Philip M. Pritchard, a member of the sales staff of its radio division for the last eight years, as manager of equipment tube sales for the East Central Division.

Patron Transmission Co., New York, has moved to new location at 129 Grand St., between Broadway and Lafayette St.

Mechanical Handling Systems, Inc., Detroit, Mich., have opened a new office at 1224 Commercial Trust Bldg., Philadelphia 2. J. F. O'Hora is manager.

KATHRYN DAY, who has joined the staff of the Hazard Advertising Co., New York, as fashion and merchandising consultant on textile and related accounts. Previously, Miss Day was engaged in fashion publicity work for the Cotton-Textile Institute, and before that had spent a number of years with the United States Finishing Co. as manager of advertising and publicity. She was at one time assistant director of the Rayon Institute, and later, of the Durene Association of America.

American Coordinating Committee on Corrosion held its sixth annual meeting recently in New York and elected Frank L. LaQue, of the Development and Research Division of the International Nickel Co., as chairman for the current year. Dr. George H. Young, of the Mellon Institute of Industrial Research, was named vice-chairman, and George W. Seagren, also of Mellon Institute, was elected secretary-treasurer. The committee headquarters are located at 4400 Fifth Avenue, Pittsburgh, Pa., and comprise delegates from 17 associations and research groups.

The Magnesium Association, New York, will hold its first annual meeting on Oct. 3 and 4 in New York at the Waldorf-Astoria Hotel. Outstanding leaders of industry will address the meeting. Perry D. Helser is secretary-director of the association.

John Barnard, Box 5621, Johannesburg, South Africa, has established an organization to serve importers or exporters in the South African and Rhodesian markets.

Bunge Corp., New York, has added Thomas A. Barber to its organization.

TRADE MARK REGISTERED
NON-FLUID OIL
U.S. PAT. OFFICE FOREIGN COUNTRIES

Stop Oil Showers

from loom bearings. Prevent loss from oil spot "seconds". Keep all your machines in steady profitable operation at lowest cost per month.

HOW? Change from leaking oil to drip-less, waste-less NON-FLUID OIL. Used in 7 out of 10 mills because it outlasts oil 3 to 5 times and keeps off goods.

New York & New Jersey Lubricant Co.

Main Office: 292 Madison Ave., New York, N. Y.

DANA WARP MILLS

Westbrook, Maine

Cotton yarns, single and ply
Cotton warps, single and ply
Colored yarns and warps
Spun rayon—yarns and warps
Seamless grain bags.

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3300 Frankford Avenue
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Yarns for All Purposes

French and English Spun Worsted
French Spun Zephyr
French Spun Merino

Representatives:—

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Mr. C. F. Peffer, The Merchandise Mart, Suite 1076, Chicago 54, Ill.
Mr. Arthur Bone, 4436 Worth St., Los Angeles 33, California

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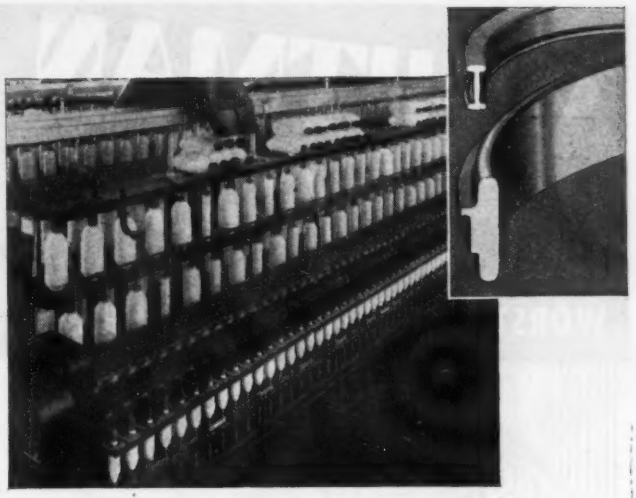

Increased Speeds meet Increased Needs

In the drive to step up spinning and twisting production, a lot is being accomplished these days with rings. In numerous mills change-over to our various lubricated styles has promoted production gains that are surprisingly large. Even without changing the style, replacing worn rings with new DIAMOND FINISH gives substantial improvement.

WE MAKE ALL TYPES OF HOLDERS

WHITINSVILLE (MASS.)
SPINNING DIAMOND FINISH **RING CO.**
Makers of Spinning and Twister Rings since 1873

Leading Designers

Tell their Fashion Story . . . . with Cotton

They bring us a new fashion story . . . an American fashion story . . . fashions of cotton for the woman of today.

These are among the outstanding designers who have created the charming, attractive costumes in the series featuring Wives and Daughters of Governors appearing in leading fashion magazines. Fashions of cotton, preferred for their durability, their versatility, their serviceability, and their washability . . . fresh, crisp cottons for the woman of today.

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1852-1944

During 92 years The William Whitman Company, Inc., and its predecessors have served the interests of important mills and users of yarns, seeking to establish for its customers a steady flow of dependable, quality yarns.

ARLINGTON MILLS
LAWRENCE, MASS.

Bradford Spun Worsted Yarns, Natural and Slub-dyed Colors and Mixes.

MONOMAC SPINNING CO.
LAWRENCE, MASS.

French-spun Worsted and Merino Yarns. Specialty Yarns—Rabbits Hair, Rayon, Acetate and Other Blend Yarns.

NONQUITT MILLS
NEW BEDFORD, MASS.

Cotton and Spun Rayon Yarns, Merino Blends, Specialty Rayon and Wool Mixtures.

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NEWS ABOUT Men

Charles G. **Duffy**, Jr., has been elected president of Duffy Silk Co., Buffalo, N. Y., succeeding his father, Charles G. Duffy, Sr., who died last February. **Paul Hemmerich**, general manager, has been elected executive vice president. **Bernard Duffy** continues as a vice president, and **George Duffy** as treasurer.

J. T. Phillips, formerly president of Buck Creek Cotton Mills, Siluria, Ala., has been elected chairman of the board; **Fred F. Phillips** has been elected president and treasurer; **A. R. Thornton**, assistant treasurer; **Henry M. Johnson**, vice-president and secretary and **T. E. Jones**, assistant secretary.

George A. Sloan, former president of the Cotton-Textile Institute, New York, and now president of the Nutrition Foundation of New York, and a director of numerous corporations has been elected a member of the corporation of the Massachusetts Institute of Technology. He has also been named chairman of the board of the *Southern Agriculturist* of Nashville, Tenn.

Erwin Holt, retired textile manufacturer of Burlington, N. C., was recently listed third among the three having the best memories in the United States for names, places and dates, by Drew Pearson, in his Washington Merry Go-Round. Topping Mr. Holt were former Postmaster-General James Farley and Mrs. Henry A. Wallace, wife of the Vice President.

A. J. Rosenstein, former president of Myrtle Knitting Mills, and Hartford Spinning, Inc., both of Unionville, Conn., who joined the United Nations Relief & Rehabilitation Administration in 1943, is now in Cairo, Egypt, as field supervisor and coordinator of materials and supplies for the Mediterranean area.

L. E. Lane, who has been made vice-president of Oconee Textile Co., Whitehall, Ga., as reported last month, has taken over the management of the plant since the resignation of **Walter M. Wellman**, president and treasurer. Mr. Well-

MAJ. WILLIAM ASHMORE, HQ, SOS, is in center of group shown above snapped while on duty with the American Army in Italy. Major Ashmore was formerly southern editor of TEXTILE WORLD. He is attached to the 7th Army and is now presumably engaged with that unit in the invasion of France from the South. At left of above picture is Lt. Col. R. Wyer, HQ, SOS, and at right is T/5 Dexter Whitmer, HQ, SOS.

You get better lubrication
increased resiliency
clearer stitch
greater output

with Laurel Rayon Oils

Your coning, winding, softening, knitting or weaving moves along with greater efficiency when you use Laurel Rayon Oils. Their protective film holds the fibers together; prevents abrasion or breakage during processing; strengthens and keeps yarns soft, supple, resilient, workable. Laurel Rayon Oils are highly penetrant. Quickly removed in regular scour. Do not oxidize or become rancid on standing. Easily applied on the coners or in packages.

Developed and tested by Laurel Laboratory—now in its thirty-sixth year—Laurel Rayon Oils can help you increase quality production, meet Government specifications. Available for immediate delivery. Don't risk costly processing errors. Use Laurel experience in textile application as hundreds of leading mills are doing. Send today for trial order and recommendations.

Laurel Rayon Size • Laurel Ruxite • Laurel Hydrosol
Laurel Boil-Off Oils • Laurel Textile Oils

* *For Victory and Peace*
—buy extra War Bonds

SOAPS • OILS • FINISHES
Laurel SOAP MANUFACTURING CO • INC •

Wm. H. Bertolet's Sons • *Established 1909*
Tioga, Thompson & Almond Sts., Philadelphia 34, Pa.
WAREHOUSES: PATERSON, N. J. • CHATTANOOGA, TENN. • CHARLOTTE, N. C.

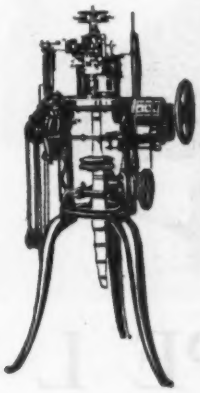
CHARLES COOPER CO., INC.
Bennington, Vermont

Manufacturers of
Quality LATCH and SPRING-BEARD

NEEDLES

also
Manufacturers of **THE FAMOUS COOPER CIRCULAR SPRING-NEEDLE RIB KNITTING MACHINES**

Now's THE TIME FOR PLANNING



Do your planning now. After the peace—is too late. Your competition is ready to fight you for your markets. Don't let them get the jump on you—because your plans aren't definite, and well advised.

BRINTON'S technical department is ready. Take advantage of its new ideas — improvements — methods — and economies. Consult BRINTON regarding your plans. Get expert counsel NOW — on your Knitting Machinery needs.

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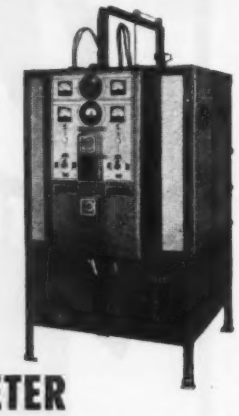
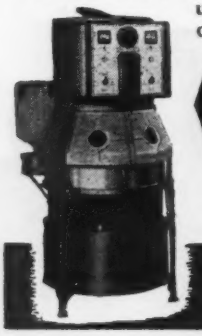
TEST TEXTILES for WEATHERING and FADING in the

ATLAS TWIN ARC WEATHER-OMETER

Faithfully duplicates the combined weathering effects of sunlight, rain, and heavy dew; accelerated to reduce years of actual weathering to a few days' testing. All weather cycles automatically controlled for continuous operation without attention.

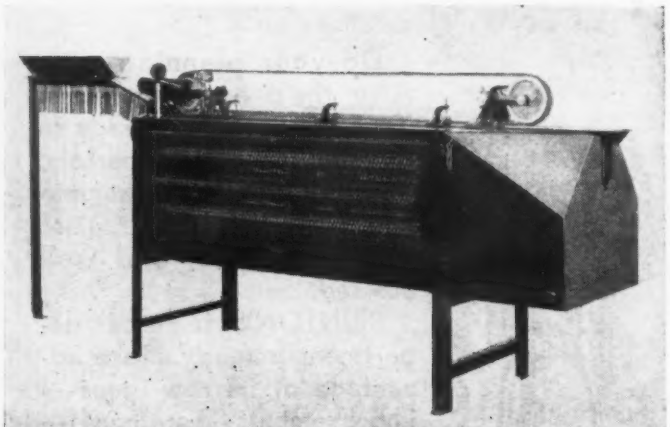




ATLAS FADE-OMETER

The recognized standard testing machine in the textile field for determining the fastness to light of dyestuffs and fabrics. Fully automatic in operation.

ATLAS ELECTRIC DEVICES CO.
361 W. Superior St., Chicago 10, Ill.
Weather-Ometer • Launder-Ometer • Fade-Ometer



THE TYPE L
LOOM BOBBIN STRIPPER
for
RAYON YARNS
The Terrell Machine Co., *Inc.*
CHARLOTTE, N. C.

James F. Notman, Needham, Mass. . . . N. E. States
E. W. S. Jasper, Inc., Elizabeth, N. J., Penn., N. Y. and N. J.
W. J. Westaway Co., Ltd., Hamilton & Montreal . Canada
Geo. Thomas & Co., Manchester, Eng. . European Agent

man has made no announcement in regard to future connections.

Irwin S. Adams, secretary of Jantzen Knitting Mills, Portland, Ore., has resigned to become vice president in charge of the swim suit department of Catalina Knitting Mills, Los Angeles, effective Aug. 19. He joined Jantzen in 1924.

Douglas G. Woolf, first vice-president of the Textile Research Institute, Inc., and formerly editor of TEXTILE WORLD, has been appointed chairman of Subcommittee C-2 in Papers and Publicity of Committee D-13 of the American Society for Testing Materials. He succeeds **R. H. Brown,** of Parks-Cramer Co., who resigned the chairmanship of the committee because of pressure of other duties but will continue as a member. **Winn W. Chase,** director of market research, the Aridye Corp., has been appointed secretary of Subcommittee C-2 which is responsible for securing papers for presentation at the general sessions of Committee D-13 meetings, and also for handling of D-13 publicity.

Harry C. Smith, of Deering Milliken & Co., Inc., New York, was elected chairman of the Print Cloth Marketing Executives Group of The Association of Cotton Textile Merchants of New York, last month. He succeeds **Fred L. Keen,** of Iselin-Jefferson Co., who resigned. **John P. Stockton,** of Stockton Co., was elected to succeed Mr. Smith as vice chairman. A task committee of the group, consisting of **John Leathem,** of Woodward, Baldwin & Co., **Frank Mountcastle,** of Southeastern Cottons, Inc., and Chairman Smith, was appointed for further cooperation with Washington distribution agencies.

Arthur Crossley, agent for Wauregan Mills, Wauregan, Conn., has been elected vice-president of the company.

W. A. Lang has become agent for Edwards Mfg. Co., Augusta, Me. He has been succeeded as general superintendent by **George Bradbury.**

Luther H. Hodges, vice president of Marshall Field & Co., Inc., New York, has been elected to membership in the New York Cotton Exchange.

Donald K. Woodward, who recently resigned as sales manager of the Newnan Cotton Mills, Newnan, Ga., with which he had been associated since 1940, has been made vice president and general manager of the yarn division of a new concern which is operating the spinning plant formerly known as the Nemasket Mills, at Taunton, Mass. Mr. Woodward was previously assistant to the president of Riverside & Dan River Cotton Mills, Danville, Va.

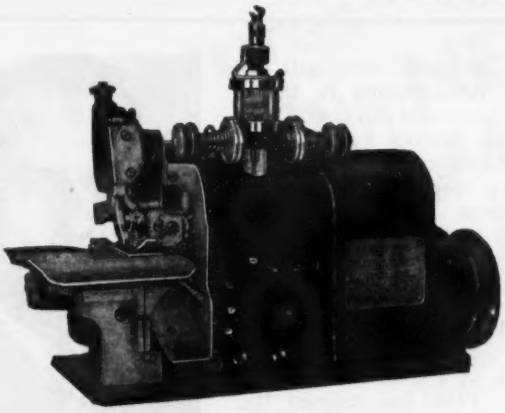
Lindsay Anderson, technical director of the Companhia America Fabril, Brazil, is planning to visit the United States

OLNEY and BACHMANN Retire from LOWELL TEXTILE INSTITUTE

Accorded the title of professor emeritus for long and distinguished service on the faculty of the Lowell Textile Institute, Lowell, Mass., Dr. Louis A. Olney and Prof. Hermann H. Bachmann have retired from active duty. Dr. Olney joined the staff in 1898 as professor of chemistry and dyeing and director of the department, and Prof. Bachmann entered the Institute's service in 1910 as head of the department of textile design, including the weaving and art departments.

Dr. Olney was graduated from Lehigh in 1896 and taught a year in the chemistry department at Brown before going to Lowell. He was influential to a high degree in the recent addition of the Louis Pasteur Wing at the Institute; was a founder and first president of the American Association of Textile Chemists & Colorists; has been directing editor of American Dyestuff Reporter for many years; and is a member of many professional and scientific organizations here and abroad, assistant editor of Chemical Abstracts, and a consultant to various textile and chemical enterprises.

Prof. Bachmann was born in Germany and studied textile designing in that country. Coming to America in 1890, he was for a time with Lorraine Mfg. Co., Pawtucket, R. I., before going to Lowell. Following his notable career at the Institute, which like that of his colleague's, has influenced the training of graduates in many parts of the world, Prof. Bachmann plans to engage in research and consultation activities, with headquarters at Lowell.



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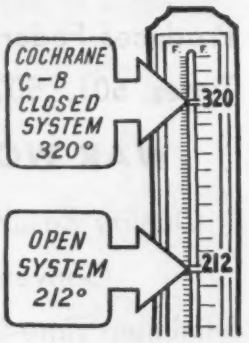

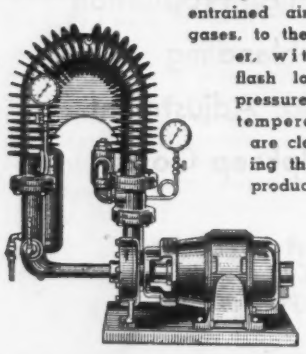

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in October to investigate recent developments in textile equipment and processes. Companhia America Fabril is one of the largest cotton manufacturing companies in South America, producing a wide range of shirtings, dress goods, and suitings, and printing cotton fabrics.

Warren D. Brewster, with Deering, Milliken & Co., New York, since 1924 and treasurer since 1936, has resigned the latter office. He is succeeded by **Roger Milliken** who is also vice-president of the company.

Ferd P. Lordan has been appointed by the New York Cotton Exchange to direct activities at the office of public relations. He has been named assistant to the president, **J. H. Scatterty.**

J. A. Bishop, formerly overseer of carding at Itasca Cotton Mfg. Co., is now superintendent of the Itasca Yarn Mill, Itasca, Tex.

Harley B. Gaston, of Belmont, N. C., on Aug. 10 was appointed a member of the North Carolina Textile Institute Commission to fill a vacancy caused by the resignation of **T. B. Bunch, Jr.,** of Statesville.

L. C. Leatherland is the first research associate to be appointed by the Institute of Textile Technology, Charlottesville, Va. He was formerly head of the Viscose Department and responsible for research and development in that department of Sylvania Industrial Corp., Fredericksburg, Va. He is a graduate of Virginia Polytechnic Institute and joined Sylvania in 1933.

Elmer P. Wright has become director of industrial relations for Naumkeag Steam Cotton Co., Salem, Mass., and Danvers Bleachery, Peabody. He joined Naumkeag as industrial engineer in 1940 and later was made superintendent of the Danvers Bleachery. **Warren E. Baker** succeeds him in the latter position.

Shannon M. Gamble, assistant treasurer of Standard-Coosa-Thatcher Co., Chattanooga, Tenn., has been elected president of the Chattanooga Control of the Controllers Institute of America.

Willard Hastings Campbell has been named merchandise coordinator of Textron, Inc., with offices in the Empire State Building, New York. Mr. Campbell has been an advertising and sales manager for several large department stores.

HAROLD J. STARKE, who has been elected vice president of Hesslein & Co., New York. He has been with the organization for the last 25 years.

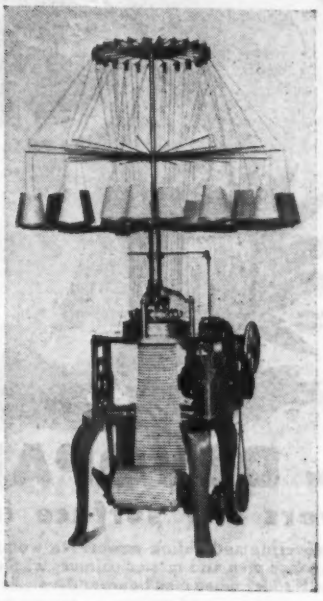
Mark Dunnell has been named controller of Bigelow-Sanford Carpet Co., Thompsonville, Conn. The office is a new one. Mr. Dunnell has been associated with the company since 1930, most recently as assistant treasurer.

Francis B. Galligan, who has been assistant superintendent of Firestone Cotton Mills, Gastonia, N. C., has succeeded **W. R. Crabtree** as manager of the Bennettsville Cotton Mills, a Firestone subsidiary, at Bennettsville, S. C. Mr. Crabtree is expected to take over a new assignment with Firestone.

Lawrence B. Steele, Jr., research chemist in the acetate research section of the E. I. du Pont de Nemours & Co., Waynesboro, Va., has been appointed research supervisor of the same section, where he is now in charge of problems related to high-tenacity rayon yarn. He has been with the company since 1933.

George P. DeBrule, for the last year assistant superintendent of Ranlo Mfg. Co., Ranlo, N. C., has been promoted to superintendent of the Modena plant, succeeding **W. H. Noblett,** resigned. **J. M. McLeod** has been transferred from assistant superintendent at the Modena mill to the similar position with the Ranlo mill. **D. C. Gunter,** who has been general overseer of spinning at Modena for several years, has

3 Features make this NEW Knitting Machine a Must!



The new Model B15 Multiple Feed Latch Needle Knitting machine . . . for all kinds of knitting materials, plain balbriggan, jersey stitch, . . . is built on three maxims, to give you a *better* machine:

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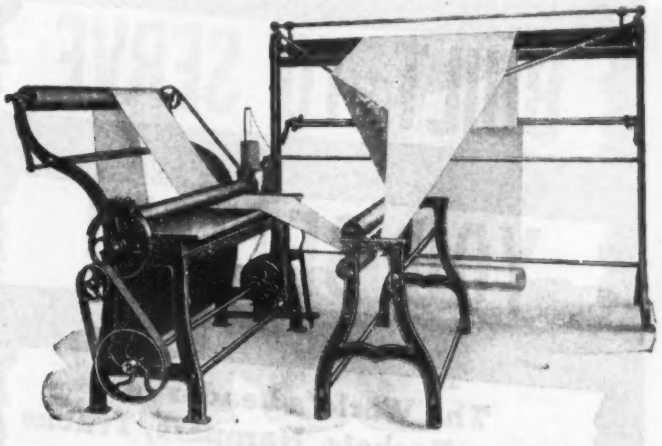

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NEWS ABOUT MEN

been appointed Mr. DeBrule's assistant.

Ted Hilton, lately assistant superintendent of Hatch Full-Fashioned Hosiery Co., Belmont, N. C., has been promoted to superintendent, and **Sam Boyer** has been appointed assistant superintendent in charge of knitting, looping and seaming; **J. R. McAteer** has been placed in charge of dyeing and finishing; **Mrs. Myrtle Lyles** is supervisor of the inspection department; **Mrs. Thelma Sellers** is supervisor of packing; **Mrs. Kay Carson** supervises distribution of all gray goods; **A. K. Culp** is foreman of the boarding department. These promotions were announced by **J. Mack Hatch**, chief executive.

George W. Baity, general engineer of Proximity Mfg. Co., Greensboro, N. C., was elected president of the Raleigh section of the American Society of Mechanical Engineers at its annual summer meeting at Sanford, N. C.

W. M. Pittendreigh, formerly in charge of the technical and engineering department of Judson Mills, Greenville, S. C., has accepted the position of general superintendent of Laurens Cotton Mills, Laurens, S. C. Both mills are Deering, Milliken & Co. plants.

R. L. Hulsey has been promoted to superindendent of carding, spinning and warping at Brookside Mills, Knoxville, Tenn.; **A. R. Tanner**, formerly at Atlanta, Ga., has become general overseer of carding, and **S. B. Smith**, formerly with Gossett Mills, Anderson, S. C., has become general overseer of spinning.

Robert Leslie, Sr., formerly connected with the worsted division of Amoskeag Mfg. Co., Manchester, N. H., has been appointed superintendent of the Southwell Combing Mill, North Chelmsford, Mass.

J. F. Dunn has resigned his position with Pomona Mfg. Co., Greensboro, N. C., and has become superintendent of carding at Consolidated Textile Co., Inc., Lynchburg, Va.

H. C. Staley has just been promoted to superintendent of research at Judson Mills, Greenville, S. C. He was formerly the throwing and preparation technician assigned to the research staff.

C. W. Forsythe has recently been assigned to the position of assistant superintendent of the textile area of Tubize Rayon Corp., Rome, Ga. He was formerly superintendent of throwing for Judson Mills, Greenville, S. C.

J. Lloyd Brewer, formerly with the Durham Hosiery Mills, Durham, N. C., has become superintendent of Asheville Hosiery Co., Asheville, N. C.

Earl B. Hofford has been appointed superintendent of S. J. Aronsohn, Inc., Christiana, Pa. He was formerly with Cheney Bros., Manchester, Conn.; Saltex Looms, Inc., Bridgeport, Conn.; and Frank Ix & Sons, Inc., Charlottesville, Va.

E. P. Taft has resigned as superintendent of John P. King Mfg. Co., Augusta, Ga., on account of ill health, and has been succeeded by **R. O. Roberts**, formerly head of the preparatory departments of Lincoln Mills of Alabama, Huntsville, Ala.

L. W. Radford, formerly associated with the United States Rubber Co., at the Shelbyville, Tenn., plant, has been made general superintendent of carding, spinning, twisting, winding and reeling at American Thread Co. plant, Tallapoosa, Ga.

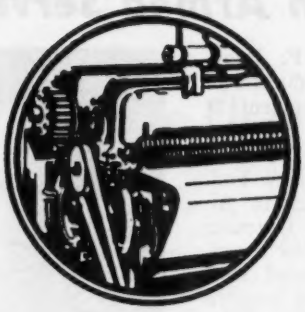
William Hoeffner has resigned as finisher for National Dixie Mills, Newnan, Ga., and has become superintendent of finishing at Excelsior Mills, Union, S. C.

R. H. Gaddy, general superintendent of Vanette Hosiery Mills, Dallas, since June, 1936, has resigned. Mr. Gaddy was general superintendent of Magnet Mills, Clinton, Tenn., prior to his association with Vanette.

L. Dillard Owen, overseer of spinning at Lincoln Mills, Huntsville, Ala., has been promoted to superintendent of the preparatory department, succeeding **R. O. Roberts**, who resigned to accept a position with J. P. King Mfg. Co., Augusta, Ga.

William R. Voight has been appointed colorist for the Clearwater Mfg. Co., Clearwater, S. C. Previous to his recent two-and-a-half years' service with American Optical Co., he was connected with Sturbridge Finishing Co.

WEAVE FOR VICTORY



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Lubricant D-6 Concentrate

lubricates and distributes the pigments so thoroughly and evenly that such frequent stops are no longer necessary. The minimum continuous yardage that has been run, using this lubricant, is 15,000 while the maximum is 33,000. Result — increased printing production and reduced maintenance cost.

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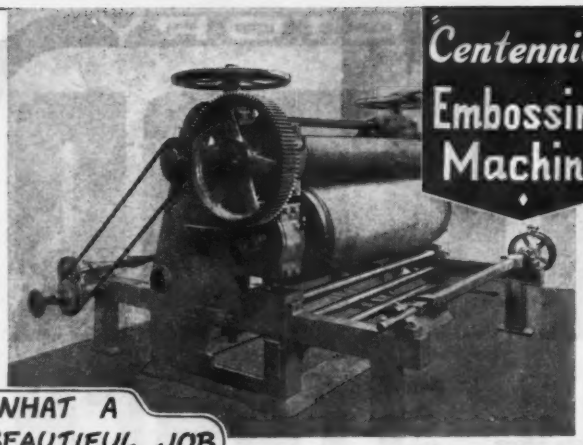

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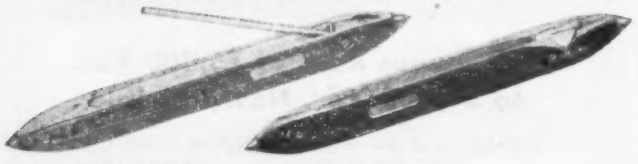

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Men in Armed Services

Comdr. Walter F. Prion, executive officer and director of research and development at the U. S. Naval Clothing Depot, Brooklyn, N. Y., an active member of the New York section of the American Association of Textile Chemists & Colorists for the last several years, has been appointed chairman of the technical program committee of the section. The first meeting of the season will be held on Nov. 17. Others are tentatively scheduled for Jan. 12, Mar. 16 and May 18.

Col. Francis K. Duffy, Commanding Officer of the New York Quartermaster Office since 1941, has been appointed Manager of the Industrial Bureau of the Commerce and Industry Association of New York, Inc., by Association Secretary Thomas Jefferson Miley, effective July 31.

Benjamin P. Anderson, formerly manager of the suiting division of Riverside & Dan River Cotton Mills and a member of that firm's executive merchandising committee, has been promoted to rank of captain in the Quartermaster Corps. He is a graduate of Philadelphia Textile Institute and entered the Army in June 1942.

John L. Latham, Jr., son of J. L. Latham, cotton merchant of Greensboro, N. C., has been promoted to major at an Eighth AAF bomber station in England.

Harry (Buck) Finney, prominently connected with Joanna Cotton Mills, Goldville, S. C., before entering the army, was seriously wounded in action on the Normandy front on July 9. He was graduated from the Presbyterian College, Clinton, S. C., and ranks as lieutenant.

J. D. Finley, a graduate textile engineer of Georgia Institute of Technology, has been promoted to the rank of major in the Quartermaster Corps.

ROY G. BUCK, lieutenant commander USN, has been designated Officer-in-Charge of the Clothing Division of the Bureau of Supplies and Accounts, Washington, D. C. He is a graduate of Annapolis and was assigned to the Supply Corps in 1936.

Prior to entering Coast Artillery in January, 1941, he was in the textile department of the Firestone Tire & Rubber Co. He was transferred to the Quartermaster Corps in 1941.

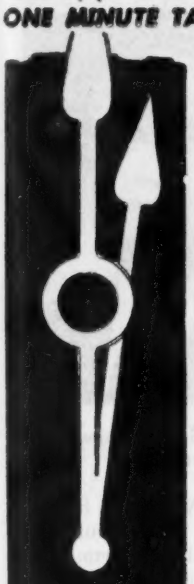
Harry Cannon, a veteran of the North African campaign with the rank of captain, has been appointed by the Cannon Mills, Kannapolis, N. C., to assist returning servicemen to obtain satisfactory employment.

Fred L. Smyre, Jr., 31, president and treasurer of A. M. Smyre Mfg. Co., Gastonia, N. C., and president and treasurer of Morowebb Cotton Mills Co., Dallas, N. C., has been commissioned a lieutenant (jg) in the Naval Reserve and has reported to the Navy Supply Corps training school at Babson Park, Mass., for active duty and training. Lieutenant Smyre's duties as president and treasurer of the two textile plants, will be taken over temporarily during his absence by T. L. Wilson, who will assume these duties in addition to his regular duties as secretary and treasurer of Ruby Cotton Mills.

Obituary

John Anderson Sweetser, 54, president of Bigelow-Sanford Carpet Co. since 1927, died suddenly at West Woodstock, Vt., on Aug. 18. He was born in Boston, Mass., and was graduated from Harvard in 1911. For a time Mr. Sweetser was assistant treasurer of Whittenton Mfg. Co., Salmon Falls Mfg. Co., and Waltham Bleachery & Dye Works, Inc., besides being director in other industrial corporations. He

ONE MINUTE TALKS ON



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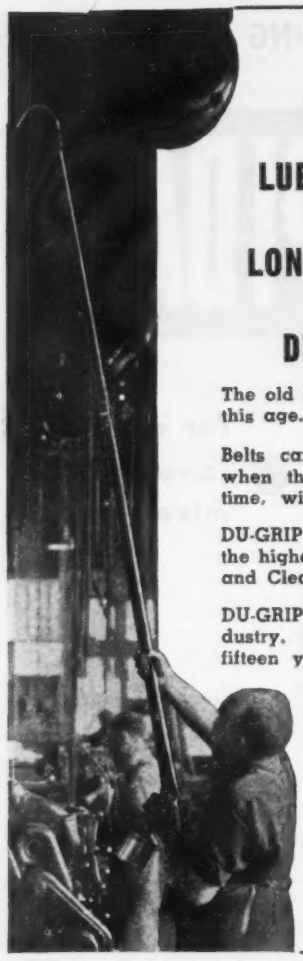

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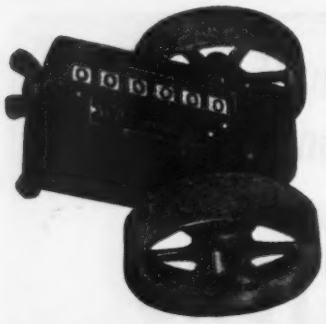

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FINISHES

BURKART-SCHIER CHEMICAL CO.
CHATTANOOGA, TENNESSEE

served on the U. S. destroyer "Benham" in World War I.

John E. Rousmaniere, 67, long an outstanding figure in the textile industry, died at Oyster Bay, N. Y., Sept. 6. He was a partner in the old selling house of Lawrence & Co., was associated with J. Spencer Turner, and a partner in Rousmaniere & Williams. For a time he headed the colored goods division of Southern Cottons, Inc. He was lately a selling agent on his own account. He was a director of Farwell Mills, American Woolen Co., and Cosmos Imperial Textile Mills. He was one of the original directors of the Association of Cotton-Textile Merchants of New York and served as it president in 1925.

Daniel Rheinauer, 69 president of the New York Knitting Mills, died Aug. 25 in New York. He served three terms as president of the National Knitted Outerwear Association.

Claude Gore, 66, a former president of Marlboro Cotton Mill, at Raeford and Great Falls Mill at Rockingham, N. C., died recently.

Sydney Perry Cooper, 67, president of the Henderson and Harriet Cotton Mills, Henderson, N. C., from 1921, until he retired in 1942, died Aug. 25, of a heart attack. Mr. Cooper had been retained in an advisory capacity and as a director.

Harry Scott Wherrett, 68, chairman of the board of directors of Pittsburgh Plate Glass Co., associated with that organization for more than 53 years, the longest service record of any employe, died on Aug. 13. He was president of the company from 1928 to 1941.

Edward E. Berthiaume, 55, for the last 12 years treasurer and general manager of Derry Fiber Mills, Inc., Derry, N. H., died Aug. 16. He was formerly superintendent of Rose-Derry Corp. for 14 years.

Capt. Lawrence Wood Robert, Sr., 86, secretary of the firm of Robert & Co. engineers, Atlanta, Ga., died in Atlanta Aug. 17. Capt. Robert was a pioneer in railway engineering in Georgia. He is survived by this three sons, L. W. (Chip) Robert, Jr., head of Robert & Co.; A. Pierce Robert, president of Atlanta Textile Machinery Co.; and Francis Hulon Robert.

J. MANNING BOLT, superintendent of Matthews Mill.

Thomas Whitwell Bowron, 65, formerly treasurer of Avondale Mills, Birmingham, Ala., died last month.

Simon Frankel, 75, director of Cooper-Wells & Co., St. Joseph, Mo., died in Los Angeles, Calif., on July 22.

James Rivers Adams, captain, U. S. Marine Corps Reserve, has been killed in action on Guam. A graduate of Virginia Military Institute in 1931, he was associated with Westvaco Chlorine Products Corp. during his entire business life.

J. Manning Bolt, 46, who had been superintendent of the Matthews Mill, Greenwood, S. C., for the last four years, died suddenly Aug. 18. Mr. Bolt formerly was connected with the Brandon Corp., Greenville, and with Chadwick-Hoskins Mill at Charlotte, N. C.

Charles Noble Alexander, 54, retired general manager of Carter Mills, Lincolnton, N. C., died Aug. 12 in Marshville, N. C.

G. Hobson Byrd, 44, secretary of Panola Cotton Mill, Greenwood, S. C., died Aug. 11.

Michael L. Sullivan, 81, former overseer at Royalston Mill of American Woolen Co., South Royalston, Mass., died recently in Newport, N. H.

Albert H. Edgerly, 76, who served for more than 40 years as chief engineer of Newmarket Mfg. Co., Newmarket, N. H., before the concern moved to Lowell, Mass., died recently in Newmarket.

Richard H. Ashby, 56, overseer of carding at Gordon Woolen Co., Hillsborough, N. H., died last month.

Style 20

LANE

The IDEAL BASKET for

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SEAMERS

RIBBERS

GENERAL

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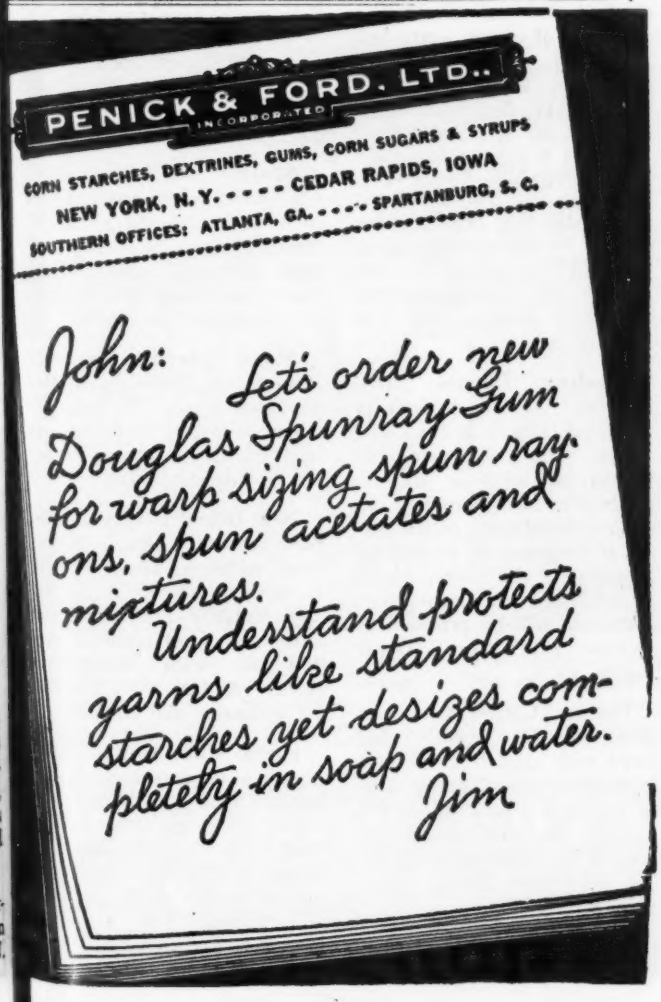
Manufacturers : POUGHKEEPSIE, N. Y.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Understand protects yarns like standard starches yet desizes completely in soap and water.
Jim

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—What's its construction?

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241 pages, 6 x 9 illustrated, $3.50

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Brings you step-by-step, clear, practical instructions on all phases of cotton loomfixing. The material is so presented that the book can serve as a textbook for courses in loomfixing or as a self-study manual for those who wish to learn the art of loomfixing or who wish to improve their knowledge and skill.

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108 illustrations, $2.50

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3. Gray Twill-woven Fabrics
4. Gray Satin-woven Fabrics
5. Staple and Specialty Dobby-woven Gray Cloths
6. Towelings
7. Colored-yarn Fabrics
8. Tickings
9. Flannels
10. Seat-cover and Awning Fabrics
11. Drapery Slip-covers, and Upholstery Fabrics
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13. Corset Fabrics
14. Bedspread Fabrics
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NEWS ABOUT Mills

Cotton Mill News

Blackstone Plush Mills, Clinton, Mass., has purchased local factory formerly occupied by Ralph A. Freundlich Co., manufacturer of dolls, and will improve and equip at once for new mill for manufacture of duck for army and navy. Large capacity will be developed. Company also recently has begun production of alpaca cloth for use as linings in naval uniforms.

Candlewick Yarn Co., Dalton, Ga., usually employed in the manufacture of bedspreads, has been allocated to war work with approximately 60 workers making wrapping twine for the government.

Cotton & Waste Salvage Co., 826 Cambridge St., Fall River, Mass., recently organized with capital of 500 shares of stock, no par value, plans operation of cotton waste mill in city. I. S. Levin is president; and Lester Bakst, 57 North Main St., Fall River, treasurer and representative.

Courtney Mfg. Co., Newry, S. C., has work well under way on construction of a number of new dwellings for operatives. The company is also making street improvements. The two projects will cost about $100,000.

Goodyear Decatur Mills, Decatur, Ala., a subsidiary of Goodyear Tire & Rubber Co., Akron, Ohio, will carry out further expansion in mill for production for government, including installation of machinery and equipment to cost approximately $200,000. Work is scheduled to begin soon. Financing will be provided by Defense Plant Corp., Washington, D. C.

Hudson Cotton Co., Gastonia, N. C., recently chartered with capital of $50,000, is said to be planning early operation of a yarn mill in this vicinity. Incorporators include Carroll C. Hudson, Gastonia; and William E. Phelps, Greenville, S. C.

Lonsdale Co., will install 120 of the 240 X-2 high-speed looms purchased from the Draper Corp. in its mill at Seneca, S. C. The remaining 120 will go into the Lonsdale mill at Berkeley, R. I.

Klunce Cotton Mills is the name of the former Barbara Mills, Inc., Salisbury, N. C. W. F. McCanless has been named president and treasurer, replacing W. P. Hazelwood, and Ross McCanless is secretary and superintendent. The plant operates 6,000 spindles and 64 looms in the manufacture of bedspreads. The plant was previously leased to Hazelwood by the present owners.

Lawrence, Mass. — Former local mill of Everett Mills, Inc., consisting of a four-story structure of 125,000 sq. ft. floor space, known as Mill No. 4, has been acquired by Bolta Co., which will occupy for warehouse service. It is said that the purchase price was $75,000.

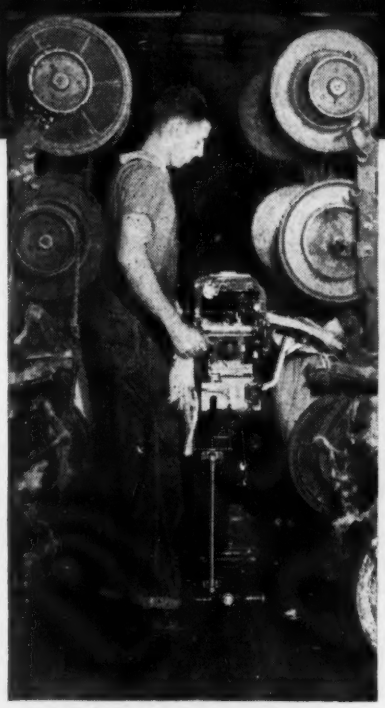
Martha Mills, Thomaston, Ga., have begun construction of a trailer site to house 50 families doing essential war work at these mills. Fifty trailers are being furnished by the Federal Government.

Mogul Curtain Co., 728 Arch Street, Philadelphia, Pa., was wrecked by fire July 27. Their four-story building was badly damaged. Origin of fire was not definitely known.

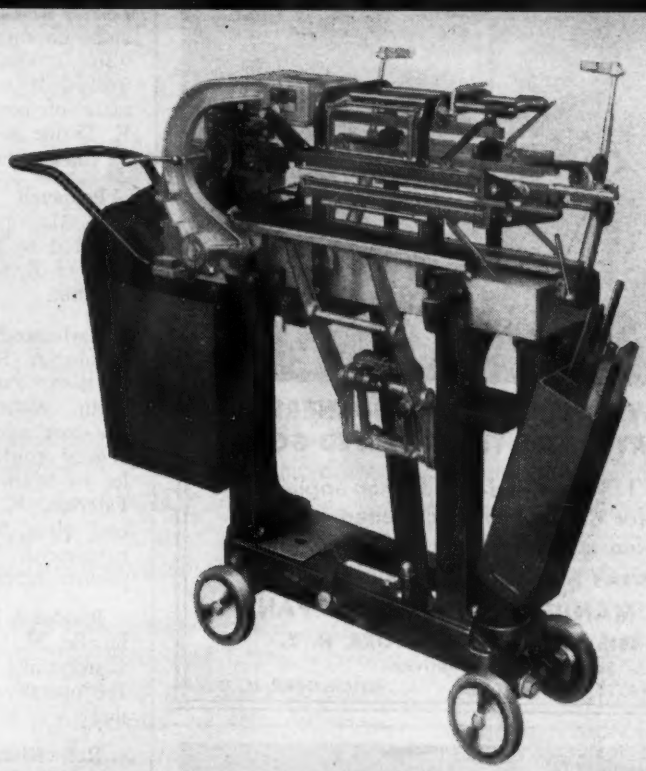
New Braunfels Textile Mills, New Braunfels, Tex., plan one-story addition, about 50x180 ft., with installation to include approximately 115 looms and auxiliaries. Cost reported over $75,000, with equipment. Robert & Co., Atlanta, Ga., are architects and engineers.

Pacific Mills, Boston, Mass., plan postwar construction of a textile plant at Hurt, Va., about 20 miles from Lynchburg. The company has purchased about 600 acres of land on which the proposed plant will be built. J. E. Sirrine & Co., Greenville, S. C., engineers, will prepare the plans.

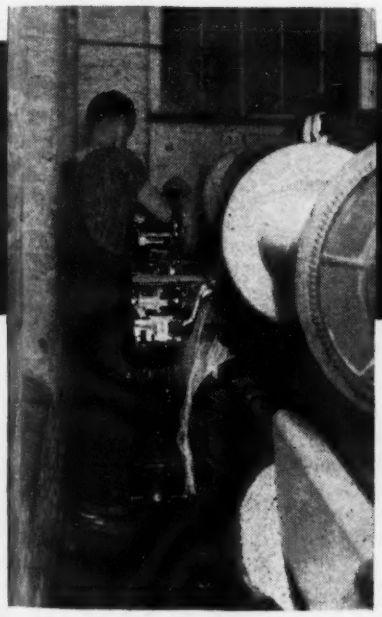
DESIGNED FOR NARROW LOOM ALLEYS and CRAMPED QUARTERS...



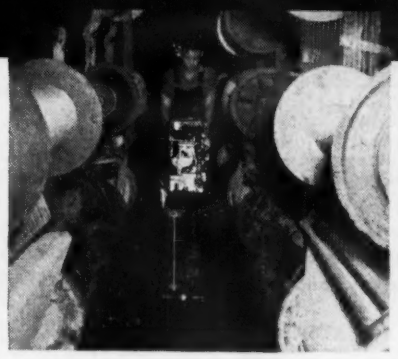
Working directly in back of the loom, the operator ties-in the warp in sections, each section or load being approximately 15" wide. The machine is hand-operated, usually at about 300 knots a minute.



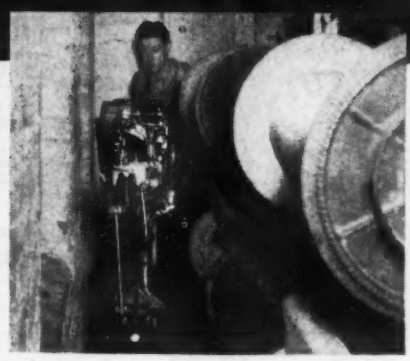
BARBER-COLMAN *Portable* WARP TYING MACHINE



A "stumbler" on the knotter eliminates missing any ends, producing a uniform row of firm knots.



The machine is light, sturdily built, and can be easily and quickly moved from one location to another.



It is compactly designed so it will work in alleys as narrow as 12". Models are available for cotton, wool, or rayon.

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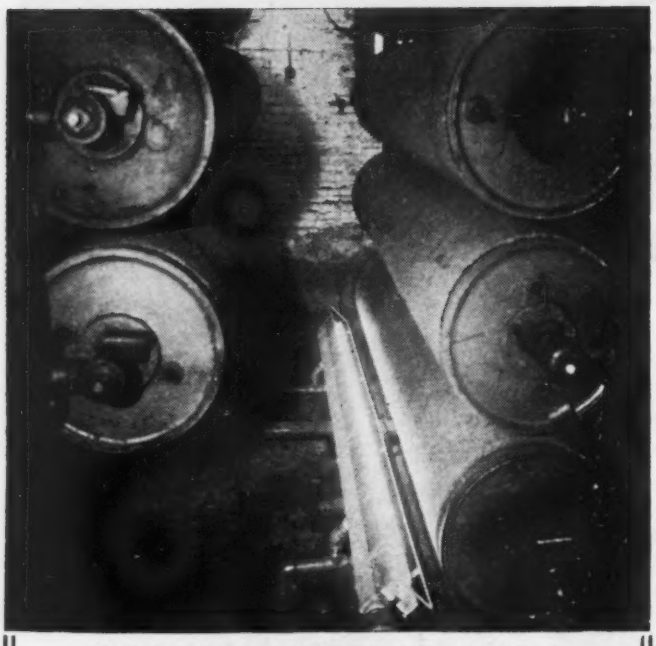

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A single 119 inch Red-Ray Burner applied to cans for drying inch thick felted material. Drying speed increased 60 per cent.

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NEW YORK SAN FRANCISCO DALLAS

Pearl Mills, Waco, N. C., of which R. J. Woods is president and treasurer, now operates 3,024 spindles on 14s and 20s carded yarn.

Pelzer Mills of Kendall Co., Pelzer, S. C., plan extensions and improvements in mill water system, and will place work under way soon. No estimate of cost announced. J. E. Sirrine & Co., Greenville, S. C., are engineers.

Pepperell Mfg. Co., Opelika, Ala., postwar plans are reported to call for the addition of dyeing and finishing facilities.

Raybestos-Manhattan, Inc., Manhattan Rubber Mfg. Co., Division, Passaic, N. J., has begun construction of new one-story addition, for which general contract recently was let to Samworth-Hughes Co., Paterson, N. J., estimated to cost close to $50,000, with equipment. Project has a priority rating.

Randolph Mills, Inc., Franklinville, N. C., is constructing a swimming pool for use by the operatives and their families.

Red River, S. C.—Cotton mill formerly operated by York Wilson, but idle for many years, has been bought by Lieut. (jg)) D. S. Lafar of Rock Hill, S. C., and will operate as unit No. 2 of Harden Mfg. Co. with main office at Gastonia, N. C.

River Mills, Inc., Greenville, S. C., plans rebuilding of warehouse at cotton mills, recently damaged by fire. An official estimate of loss has not been announced.

Respro, Inc., Cranston, R. I., manufacturer of shoe fabrics, tapes, etc., a subsidiary of United Lace & Braid Mfg. Co., Cranston, has awarded general contract to Bowerman Bros., Cranston, for new one-story mill addition, reported to cost close to $35,000, with equipment. Project is understood to have a prioriy rating.

S. Slater & Sons, Slater, S. C., have awarded general contract to C. M. Guest & Sons, Anderson, S. C., for alterations and improvements in mills, including re-roofing of different structures (previously reported), and work is being placed under way. J. E. Sirrine & Co., Greenville, S. C., are architects and engineers.

Vee-Gee Yarns, Inc., 95 Bridge St., Lowell, Mass., recently organized with capital of $50,000, plans operation of local mill for manufacture of cotton yarns. Charles E. Watt, Chelmsford, Mass., is president and treasurer.

West Point Mfg. Co., West Point, Ga., which lately purchased the Samoset Mills at Talladega, Ala., and the Wehadkee Yarn Mills, at Rock Mills, Ala., will operate these two mills as the Chinnabee division.

Wool Mill News

Arlington Mills, Lawrence, Mass., have installed eight new cards in the Top Mill card room. They replaced machines which had been giving continuous service for the last 45 years.

Artex Woolens, Inc., Hespeler, Ont., has approved plans for extensions and improvements in local mill, reported to cost about $45,000, with equipment.

Beacon Mfg. Co., Swannanoa, N. C., has acquired plant of Winder Cotton Mills, Winder, Ga., consisting of two-story mill structure and auxiliary buildings. Plant will be converted for manufacture of woolen blankets, with installation of machinery in part of structure to be placed under way at early date. Portion of mill is now being used for duck production for Government and will be continued in that line until contract for material is completed.

Bigelow-Sanford Carpet Co. reports sales totaling $19,753,489 for the six month's period of 1944, compared with $18,891,675 for the first six months of 1943. Net earnings were $516,638 against $232,807, respectively.

Booth Felt Co., Inc., 732 South Sherman St., Chicago, Ill., recently chartered with capital of $25,000, will take over and expand company of same name with local plant at location stated. Incorporators include L. D. Croninger and A. A. Nagler.

Dresden Woolen Mills, Zanesville, O., have been purchased at sheriff's sale by Nicholas Marcoglou, of New York, who plans to reopen the plant at an early date.

Hayward Woolen Co., East

How Four Leading Manufacturers are Helping Save Precious Paper for Uncle Sam

A BIG OIL COMPANY—"In 1943 we reduced the number of issues of our house publication from 12 to 6. Our employe house organ was reduced in size as were our dealer window displays, and all promotional material was kept to the smallest possible size."

A BIG DRUG COMPANY—"The weight of our corrugated board was reduced to the minimum necessary for protection to our goods in transit. The weight of board used on some items was cut almost in half. We increased the pack per shipping case on many items where doubling of the quantity in each case would not result in an unwieldy or hard-to-lift unit. Nests, partitions and liners were dropped right and left. Package insets have been dropped except on one item."

A BIG CHEMICAL COMPANY—"Where 100-pound basic-weight paper had been specified as desirable, the lightest practical weight is now used. All pieces and forms are carefully checked for reduction to next standard smaller size, excessive margins, and number of pages or parts. The Company has adopted single typewriter spacing where practical, typing on both sides of the sheets, pruning lists, and all such miscellaneous practices. Wastepaper at our plants and offices is not burned but baled to reach paper mills for conversion."

ANOTHER BIG DRUG COMPANY—"In 1943 we stopped issuing an almanac. We had been sending out around twenty million. We also discontinued our small booklets, the edition of which was some thirty to thirty-five millions. For 1944 we kept the ban on booklets and also cut out the printing of twenty million calendars."

These quotations are from reports to the A. N. A. Paper Committee

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USE LESS PAPER — SAVE ALL WASTEPAPER

This advertisement contributed by this publication and prepared by the War Advertising Council in cooperation with the War Production Board and the Office of War Information.

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TABER ABRASER
"WEAR CYCLE" TESTS

All fabrics . . . cotton, woolen, rayon and silk can be quickly and easily tested and rated in terms of "wear cycles" with the same Taber Abraser. Scientific wear action by "Calibrase" wheels and turn table provide "wear cycles" that are totaled on built-in cycle counter.
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COST SYSTEMS WORK LOAD STUDIES
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GREENVILLE, S.C. FALL RIVER, MASS.

CHAPMAN
STATIC
NEUTRALIZER
Reduces waste and Stabilizes the production rate in many operations
USED ON
CARDS - CONDENSERS - DRAWING FRAMES
SLASHERS-WARPERS-GARNETTS-FOLDERS-DRYERS
NAPPERS - SHEARS AND MANY OTHER MACHINES
CHAPMAN ELECTRIC NEUTRALIZER CO.
BOX 268, PORTLAND, MAINE

Douglas, Mass., is not a part of the recently-formed combine of the Hayward-Schuster group as incorrectly stated in these columns in July. It is instead a separate corporation owned solely by Messrs. Hayward, Murray and Jacob.

Litchfield Woolen Mills Co., Litchfield, Minn., has installed 8 new automatic looms, 2 new spinning frames, rewinding equipment, and a raw-stock dye tub. This is the start of a $78,000 modernization program. Plymouth T. Nelson is manager of the mill.

Normandy Worsted Co., Inc., 345 Chelmsford St., Lowell, Mass., has been chartered with capital of 100 shares of stock, no par value, to operate a local mill. James P. Cassidy, 45 Merrimack St., is company official and representative.

Orr Felt & Blanket Co., Piqua, Ohio, has tentative plans under way for extensions and improvements in mill, including installation of additional equipment. Cost reported in excess of $75,000.

Pilgrim Rug Co., Barrington, R. I., recently chartered with capital of $20,000, is said to be planning early operation of a new mill in this vicinity for rug and carpet manufacture. Incorporators are Edgar F. and Forrest E. Slocum, 36 Woodlawn St., Pawtucket.

Wool Process Co., Inc., 339 Main St., Worcester, Mass., has been organized with capital of 1000 shares of common stock, no par value, to operate a wool processing plant. M. E. Power, 10 Birch St., and I. K. Barr, 814 Southbridge St., both Worcester, are incorporators.

Uxbridge Worsted Co., Inc., Uxbridge, Mass., and Macon, Ga., has completed arrangements for an aggregate of $1,500,000 15-year 3¼% sinking fund loans with Metropolitan Life Insurance Co., New York, and The Penn Mutual Life Insurance Co., Philadelphia. The loan, arranged by Goldman, Sachs & Co., will provide the company with a portion of the funds necessary for its postwar development program.

Woonsocket, R. I.—Arthur L. Guerin of Arthur L. Guerin & Co., has bought the plant formerly owned by Paramount Wool Co. on Benefit St.

Rayon & Silk Mills

American Enka Corp., Enka, N. C., has put into operation the first spinning machines in the new addition to its plant. The new spinning machines manufacture high-tenacity yarn by the pot spinning process. Within the next few weeks, additional machines will be put into operation. The added facilities will produce about 10,000,000 lb. per year, which is approximately one-third of the plant's present over-all capacity. The entire program, including the additional buildings and new machinery, represents a cost of approximately $5,000,000. The company has an operating personnel of about 3,000 operatives, and it is estimated that between 1,500 and 2,000 additional operatives will be needed for the expanded facilities.

Bradford, Pa.—Former local mill of Leon-Ferenbach Silk Co., Inc., has been acquired by Corning Glass Works, Corning, N. Y., which will convert for a new branch factory.

Desmour, Inc., Georgiaville, R. I., recently chartered with capital of 100 shares of stock, no par value, plans operation of a rayon fabric mill in this vicinity. Ernest Seymour and Antoine T. Desaulniers, 729 Grove St., Woonsocket, R. I., are principal incorporators.

Freeland Textile Mill, Inc., Freeland, Pa., has installed a new air-conditioning system, which is expected to speed production in the plant which is working exclusively on government orders. Plate glass windows in the plant have been removed and glass blocks installed in a portion of the space.

Front Royal, Va.—The CIO, granted priority on certain materials by the government, will construct 300 houses in Front Royal for employes of the American Viscose Corp. As an initial step in its building program, the CIO has taken a 30-day option on 57 acres of land, near Front Royal, as a site for its proposed building program. Meanwhile, the housing committee of the local union, Textile Workers' Union of America, is continuing with construction of an experimental residence.

Tubize Rayon Corp., Hopewell, Va., has leased

three large buildings at Hopewell to the United States Foil Co., an affiliate of Reynolds Metals Co. The buildings are those in which the Tubize corporation formerly made its nitrocellulose rayon, a process since abandoned.

Knitting Mill News

Base Hosiery Mill, Villa Rica, Ga., has recently purchased another factory building there as part of an expansion program. The mill is operated by Walter Nix.

Belmont Hosiery Mills, Inc., Belmont, N. C., will have plans prepared by H. V. Biberstein, Charlotte, N. C., architect and engineer, for proposed new hosiery mill to be carried out as a postwar project. It will be three-story, about 80 x 250 ft., reported to cost over $200,000, with equipment.

Jack & Jill Knitting Mills is the firm name under which Joseph Goldstein has published a certificate that he is conducting business at 707 Columbus avenue, Los Angeles, Calif.

Hatch Full-Fashioned Hosiery Co., Belmont, N. C., has installed a first aid room. It has everything complete for first aid treatment.

Mack Knitting Mills, Inc., Long Island City, New York, care of Levy, Kornblum & Katz, 26 Court St., Brooklyn, N. Y., attorneys and representatives, has been incorporated with capital of $20,000, to operate a local plant, to specialize, it is understood, in outerwear.

Nebel Knitting Co., Inc., Charlotte, N. C., plans establishment of new branch mill at Louisville, Ky., where property will be selected at early date. Project will be carried out as a postwar development.

Silver-Knit Hosiery Mills, Inc., High Point, N. C., recently acquired outright, the property it has leased for many years and will expand. Milton Silver, president, said the building has 100,000 sq. ft. of floor space, and that at present some 550 operatives are on the payroll.

Team Knitting Mill, Inc., New York, N. Y., care of Abraham **M. Marquit, 66** Court St., Brooklyn, N. Y., attorney and representative, has been chartered with capital of $20,000, to operate local mill.

Processing Plant News

American Dyeing Corp., Fiskdale, Mass., has work underway for a new boiler house, and has announced the following contract awards: General, F. X. Laliberte & Son, Inc., Southbridge; reinforcing steel, Truscon Steel Co., Boston; piles, Roy B. Rendle & Co., Inc., East Boston; steel sash and operators, Wills & Hill, Boston; roofing, Priscilla Paint & Roofing Co., Southbridge.

Textileather Corp., 607 Madison St., Toledo, Ohio, manufacturer of special processed fabrics, plans one and two-story and basement addition to plant at Dayton and Stickney Sts., about 60x82 ft., reported to cost about $35,000, with equipment. Bids have been asked on general erection contract and award will be made soon. Raymond C. Reese, 1931 Sussex Pl., Toledo, is engineer.

Miscellaneous Mill News

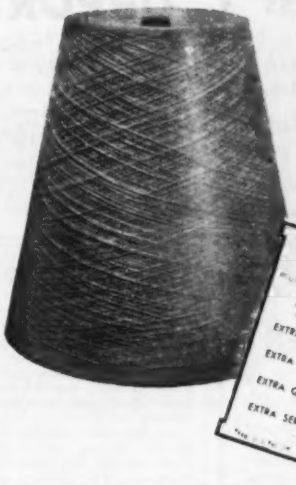
M. E. Binz Co., Ltd., Montreal, Que., plans one-story addition to mill at Montmagny, Que., reported to cost about $50,000, with machinery.

Canada Western Cordage Co., Vancouver, B. C.—Construction of a spinning mill to process the flax line fiber now produced in the Fraser Valley is a post-war measure which will play a part in rehabilitation, according to Capt. Frank Brown, president, Canada Western Cordage Co. Ltd., New Westminster and Vancouver, B. C., if an increased and stable production of flax is assured. At least 2000 acres of flax or double the Fraser Valley acreage would be required to maintain continuous operation for a spinning mill.

Canadian Raybestos Co., Ltd., Peterborough, Ont., has preliminary plans for addition to mill on Perry St., reported to cost close to $45,000, with equipment.

Pensacola, Fla.—Newport Industries, Inc., Pensacola, manufacturers of chemicals, plan establishment of a pilot plant for processing fiber ramie, a new development for company. United States Sugar Corp., Clewiston, Fla., will furnish raw material for mill.

AMERICAN



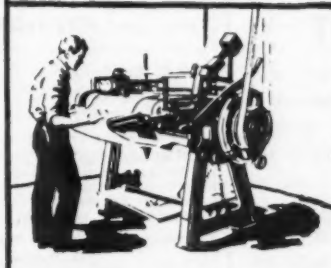
. . . more economical to use because . . . . it runs more efficiently, producing a finer quality product that can be sold easier and more profitably

AMERICAN
YARN AND PROCESSING CO
MOUNT HOLLY, NORTH CAROLINA

Sales Manager, E. F. REDDING, MOUNT HOLLY, N. C.

CHATTANOOGA, TENN. Mr. Tom Moore 735 Chestnut Street
PHILADELPHIA, PA. Mr. Wm. S. Montgomery 3701 N. Broad St.
HIGH POINT, N. C. Mr. E. J. Holbrook
MOUNT HOLLY, N. C. Mr. Edwin Hutchison Miss E. R. Abernethy Mr. T. J. Davis
NEW YORK, N. Y. Mr. Rowland Swallow Empire State Bldg.
CHICAGO, ILLINOIS Mr. E. W. Wood 222 West Adams St.

BINDINGS



from straight and bias fabrics produced at high speed on Camachine 40-3L.

CAMERON MACHINE COMPANY, 61 Poplar St., Brooklyn 2, N. Y.

Simplified DESIGN
Flexible POWER
Better EVAPORATION
More sensitive CONTROL

SOUTHWORTH HUMIDIFIER

Experienced textile men who know the merits of previous models of Southworth Humidifiers have found improvements in Model D that make it even more reliable and efficient.
Extreme sensitivity of control, and an "airplane propeller" type fan for greater evaporation, are two outstanding features.

NOTE
This advertisement is to remind you to include Southworth Humidifiers in your after-the-war plans. Frankly, we are 100% on war work and cannot make humidifiers at the present time.

THE SOUTHWORTH MACHINE CO.
PORTLAND MAINE

SEARCHLIGHT SECTION

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

UNDISPLAYED RATE:

(Not available for equipment advertising)

10 cents a word, minimum charge $2.00. (See ¶ on Box Numbers.)

POSITIONS WANTED (full or part-time individual salaried employment only), ½ above rates.

PROPOSALS, 50 cents a line an insertion.

INFORMATION:

BOX NUMBERS in care of any of our New York, Chicago or San Francisco offices count 10 words additional in undisplayed ads.

DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

DISPLAYED RATE:

The advertising rate is $5.75 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page. T.W.

NEW ADVERTISEMENTS received by 10 A. M. October 3rd will appear in the October issue, subject to limitations of space available.

WANTED

PRODUCTION MANAGER
BRAIDED RUG MILL

Large eastern cotton rug manufacturer has opening in organization for production manager in braided rug division; excellent future for right man who must be conversant with all phases of business including raw materials, labor training, styling. State full details experience, age, compensation desired, etc. All replies will be held strictly confidential.

P-932, Textile World
330 West 42nd St., New York 18, N. Y.

SPREADER HAND

One who can take charge of Spreader Room. Rubber plant located in vicinity of Boston, Mass. Excellent opportunity for the right man.

Write P.O. BOX 112, Chelsea, Mass.

WANTED

COTTON AND RAYON MILL SUPERINTENDENT

A progressive New England mill equipped with modern machinery offers an unusual opportunity to the right man who could satisfactorily fill the position of manufacturing superintendent. Proper compensation and returns await a resourceful and energetic man in an organization with an enviable record. Prefer a man who is thoroughly familiar with cotton and rayon manufacturing now employed. Give all particulars and references in first letter. Address your reply to

P-939, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

FIXERS

for Scott & Williams and Acme Hosiery Knitting Machines
Steady Employment

P-938, Textile World
330 W. 42nd St., New York 18, N. Y.

POSITIONS VACANT

WANTED—Woolen mill superintendent. Man with thorough knowledge of designing, plus practical mill experience, having good knowledge of all woolen mill processes and who thoroughly understands the operation of all woolen mill machinery, by a small progressive New England woolen mill presently manufacturing high grade virgin wool men's wear fabrics. We are looking for a man who will be with us for many years and make money with us. The salary for the first year is $7500.00 from then on, the salary shall remain the same but he shall be paid in addition, a percentage of the profits. Give full details in first letter. P-948, Textile World, 330 W. 42nd St., New York 18, N. Y.

HELP WANTED—Excellent opportunity now open with midwestern firm—one of the most successful in its field—for technically trained man. Duties to consist of consultation and sales work with laundries and other industries using soaps and detergents. Sound background covering laundry practices, water treatment, and possibly textile manufacture desirable. P-949, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

TEXTILE ENGINEER with chemical background wanted to take charge of formulation, design and quality control for the production of high quality asbestos textiles. This is a field which will develop rapidly. Research, development and quality control work. Old established company. Post-war security. W.M.C. certificate required. Please give full history, photograph, and salary desired in first letter. Cotton or wool carding experience valuable. P-950, Textile World, 330 W. 42nd St., New York 18, N. Y.

POSITIONS WANTED

PRACTICAL RAYON crepe and hosiery throwster desires to make connection with a reputable concern. Age 44. PW-891, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

TEXTILE INSTITUTE graduate. Twenty-five years executive experience wool and worsted, private concerns and government. Desire change in executive capacity. P-914, Textile World, 330 W. 42nd St., New York 18, N. Y.

(Continued on page 264)

WANTED

DESIGNER

Must be thoroughly familiar with all types of pile fabrics and yarns.
State age, experience, previous connection, salary desired.

P-933, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

MANAGER FOR NARROW TEXTILE MILL IN VIRGINIA. Essential industry. Operations include warp sizing and weaving. Narrow textile experience desirable but not essential.

Excellent opportunity for the man who is seeking a secure position with a responsible and well established concern.

Write fully, stating experience, age, education, salary requirements, etc.

P-941, Textile World
330 West 42nd St., New York 18, N. Y.

POSITION VACANT

TECHNICAL EDITOR

For textile magazine. Must have exceptionally good command of English. Write experience and salary required.

P-854, Textile World
330 West 42nd St., New York 18, N. Y.

To EMPLOYERS who advertise for MEN:

Frequently, when there are many applicants for a position, only the most promising letters are acknowledged. The other applicants never know whether their letters reach a prospective employer or not. These men often become discouraged, will not respond to future advertisements and even question their bona fide character.

Every advertisement printed in the Searchlight Section is duly authorized. You can help keep our readers interested and get better returns to your advertising in this section if you acknowledge each reply—in plain envelopes, if you wish.

Departmental Staff

McGRAW-HILL PUBLISHING COMPANY, INC.

"Put Yourself in his place."

Controller, Treasurer or Assistant to Senior Executive—Available

Twenty years of sound diversified experience in finance, accounting, management. Installed budget, cost and general accounting systems. Knowledge of standard costs, taxes. Economic minded. Proven administrative ability. Desire heavy responsibilities. Age 40.

P-940, Textile World, 330 West 42nd St., New York 18, N. Y.

THERE ARE MANY ATTRACTIVE OPENINGS IN MILLS

In all sections of the United States and Canada. If you are seeking employment, write us fully regarding your experience and position desired; we will inform you of positions now open in your line of work.

CHARLES P. RAYMOND SERVICE, Inc.

294 WASHINGTON STREET BOSTON 8, MASS.

Over 45 years' confidential employment service for men seeking positions and employers seeking men.

A "LIGHT POCKETBOOK"

still buys substantial values in many items of ◄MLC► EQUIPMENT

GOOD used Textile Equipment need NOT necessarily cost you big money. There are MANY items of ◄MLC► equipment that cost LESS than you might expect to pay. These items offer substantial savings under ceiling prices, even in today's market. The ◄MLC► policy of "fair-to-everybody prices" means exactly what that implies—NOT trying to get all the traffic will bear, but selling dependable used equipment so as to give our customers the utmost value for their money. We buy on that basis, too. So, investigate ◄MLC► before you finally decide to buy (or sell)—and you may be greatly surprised by ◄MLC► prices.

This list may contain many items you need—at moderate prices

2—92" D & F Warpers with Beamers
2—46" Button Breakers
1—52" Button Breaker
1—42" Butterworth 3-Roll Friction and Rolling Calender, motor driven
1—54" American Coating Machine
1—Complete Set Combers including:
1—Whitin Ribbon Lapper
1—Whitin Sliver Lapper
8—Whitin Model "C" Combers
1—Rotary Cloth Cutter, 5" knife
1—72" P.&W. Semi-Decating Machine, complete with Nash Pump and Motor, cylinder 12" dia. by 72" face.
2—100 Spindle Foster Model 25 Doublers
1—36" Doubling & Winding Machine
1—46" Windle Doubler
1—60" Windle Doubler, Winder and Measurer
1—6 Delv. Whitin Drawing Frame with 12" coiler
1—4 and one 6 delv. H & B dr. frame
1—66" Heathcote Cloth Dryer, wood housing, 17 yds. when loaded
1—28" Stick Klauder Weldon Skein Dyeing Machine
1—Laboratory Hydro Extractor
1—28" American Laundry belt driven extractor
1—40" American Tool underdriven Copper basket belt driven extractor

4—Smith & Furbush All-iron Card Sets, 48" wide, taking off 60 ends

2—Hunter No. 10 Fulling Mills
1—40" Elliott & Hall Folding Machines
4—42" Elliott & Hall Folding Machines
4—46" Elliott & Hall Folding Machines
1—Card grinder, no motor
8—1200 h. Halton Jacquards, 9" lift
60—42" Modified "E" Draper with roller tops, 47½" reed space, belt driven
8—17 ft. Fletcher Victory Web Looms, 12 space, 1942, with numerous parts and supplies
50—76" Reed Space 2 x 1 Draper modified D Auto. Looms, 20 harness; motor driven
13—82" Reed Space 2 x 1 Draper modified D Auto. Looms, 20 harness, motor driven
43—82" Stafford 1 x 1 automatic Looms, 20 harness, motor driven

110—76" Draper Modified "D" (1928) Lacey Top Looms, 6 harness, 81" reed space; individually motor driven, 3 phase, 60 cycle, 220 volt motors.

18—82" C & K 4 x 4 25 Harness motor driven woolen looms
2—82" C & K (4 x 4) 25 Harness Woolen Looms, belt driven

1—90" D. F. Single Acting 14 Roll Napper
1—40" Furbush Mixing Picker
2—40" H & D Single Process Pickers
1—66" Voelker Cloth Press
1—60" C & M Plush Shear
3—66" C & M 2-Blade Shears
3—66" P & W 2-Blade Shears
1—66½" P & W Model A 2-Blade Shear
1—72" Montsford 2-Blade Shear
1—Schultze 106" Double Shear
1—42" C. & M. 5 Burner Gas Singer
3—204 Sp. Lowell 2¼" Ring Band dr. Spinners
8—120 Spindle Draper Spoolers
2—Warp Compressor Machine Co., Multiple Jack Spoolers
1—60" C & M Tiger
4—20 Spindle Universal #90 Filling Bobbin Winders, bottom supply
9—100 Spindle Foster #12 tube winders, belt driven
2—200-spindle Draper 2¼" Ring Tape Drive Twisters
2—82" D. & F. Warpers with Beamers, etc.
1—Barber Coleman Auto. Warp Tying Mach., size 4-E.
2—60" Edge Stenciling & Winding Machines
6—24 Spindle Fairmont Drum Spoolers for 4½ x 6" spools
10,000—4½" x 6" Wooden Spools
1—98 Spindle Abbott Auto. Winder

MACHINERY LIQUIDATING COMPANY

OPA REGISTRATION NUMBER 789

EST. ◄MLC► 1923

31-33 West 42nd Street NEW YORK 18, N. Y.

DOMESTIC TELEPHONE PEnnsylvania 6-8014 EXPORT

DEALERS IN TEXTILE MACHINERY, ACCESSORIES AND MILL SUPPLIES

SEARCHLIGHT SECTION

(POSITION WANTED)

Plant Manager

Connection desired. Textile graduate, thoroughly experienced both practical & technical in the manufacturing, dyeing and bleaching of Plain, Dobby and Jacquard towels, bedspreads, draperies, viscose and acetate rayons, ribbons, wool & worsted mixtures, knows costing, styleing and selling. Invites correspondence.

PW-943, Textile World
330 W. 42nd St., New York 18, N. Y.

KNITTING MILL SUPERINTENDENT
WANTS POSITION

At present employed, desires change. Draft exempt. Have adequate education. 10 years experience in knitting. Will consider anywhere in U. S. Can furnish reference.

PW-944, Textile World
520 North Michigan Ave., Chicago 11, Ill.

WANTED

VELOUR MILL

Small Velour Weaving Mill Up to 25 Looms. Send Full Details as to the Type of Looms and Other Equipment.

W-883, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

To Purchase small going dyeing and finishing plant working on cotton or rayon piece goods, located within 100 miles of New York City.

W-934, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED AT ONCE

2—4 Dye Jiggs
1—open soaper
1—dye padder
1—set of 8-20 dry cans—vertical stack
1—low type winder or beamer
State width, and give full description with price in first letter.

W-935, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

378 end quiller
and
#50 Universal winders

Give description, price and location.

W-942, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED TO BUY

36" 28x24 count unbleached chessecloth in rolls or bolted.

GEO. W. RENNER CO.
2309 Lillie St., Fort Wayne 5, Ind.

POSITIONS WANTED
(Continued from page 262)

NYLON HOSIERY tram throwing. Post-war plans of a large hosiery mill. A technical and practical superintendent of modern throwing desires to contact a hosiery mill contemplating their own nylon throwing department. Married, age 38, location no object. PW-913, Textile World, 330 W. 42nd St., New York 18, N. Y.

NYLON — RAYON* — silk throwing. Hosiery tram throwster desires position as superintendent or assistant. 12 years of technical and practical experience in modern throwing. Nylon a specialty. Location no object. Married, age 38, presently employed but desire a change. PW-912, Textile World, 330 W. 42nd St., New York 18, N. Y.

OVERSEER WORSTED combing wants position, 38 years old. 19 years experience, Lowell Tech. Institute graduate. Present employer references. Personal interview desired. PW-917, Textile World, 330 W. 42nd St., New York 18, N. Y.

MANAGEMENT ENGINEER now connected with large concern desires change. Extensive experience in work—simplification time—motion studies, methods, wage—incentive systems, job evaluation, production control, cost systems. Age 43 years, married, college graduate. PW-946, Textile World, 330 W. 42nd St., New York 18, N. Y.

SUPERINTENDENT warping, slashing on weaving by a young man experienced with dress and sheer goods linings fancy and novelty box and dobby weaves C&K Stafford and Draper looms. PW-947, Textile World, 330 W. 42nd St., New York 18, N. Y.

EXPERIENCED FORMER financial executive desires to have personal interview with cotton mill organizations desiring a treasurer or assistant treasurer. Long experience in duck and combed yarn business. Present connections are satisfactory but prefer to return to the textile industry. PW-951, Textile World, 330 W. 42nd St., New York 18, N. Y.

FABRIC STYLIST-designer. Seven years with top woolen house; presently in fashion publicity. Practical, technical layouts, designs, ideas, sketches or hand-loom samples. Good colorist. Analytical, advance style program. Market contacts. PW-952, Textile World, 330 W. 42nd St., New York 18, N. Y.

SALESMAN AVAILABLE

DYER. 48 years old wishes position as salesman or demonstrator where twenty-five years experience of processing and dyeing all fibers would be helpful. SA-953, Textile World, 330 W. 42nd St., New York 18, N. Y.

FOR SALE OR RENT
A Complete Rayon Yarn Mill Capable of Producing 4000 Lbs. of Yarn Per Day

FOR PARTICULARS, WRITE:

BO-945, Textile World
330 W. 42nd St., New York 18, N. Y.

PROFESSIONAL SERVICES

LANCASTER, ALLWINE & ROMMEL

Interesting booklet concerning Inventions, Patents, Trade-Marks and Copyrights, together with Schedule of Government and Attorney's Fees, sent without obligation. Simply ask for "booklet and schedule."

Established 1915
Patents & Trade-Marks
Suite 448, 815—15th St., N.W. Washington 5, D. C.

J. L. TUCKER
Consulting Service
for
MANUFACTURERS AND USERS OF FIBERS AND TEXTILE PRODUCTS ON FIBERS PRODUCTS PROCESSES ENGINEERING

Box 37, North Scituate, Rhode Island
P. O. Box 494, Newark, Ohio

Specialists in Foreign Trade offer
EXPORT OPPORTUNITIES

to manufacturers of textiles and textile products who are desirous of taking advantage of the great post-war possibilities now in the making.

Reliable, established export organization will sell your products in over-seas markets to your satisfaction and highest monetary remuneration.

Correspondence Invited

BO-931, Textile World
330 West 42nd Street, New York 18, N. Y.

FOR SALE

FOR SALE

1—70" 4 Knife "Hermas" Shear
1—60" Plush Embosser, variable speed drive, with 5 engraved brass rollers.

FS-936, Textile World
330 West 42nd St., New York 18, N. Y.

FOR SALE

2—Mixing Tilting Kettles — 50 gallons and 70 gallons
1—42' Self-Balancing Extractor
1—60" 3-Roll Quetch

FS-937, Textile World
330 W. 42nd St., New York 18, N. Y.

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SINGEING MACHINE

1—80" 2-Burner Singeing Machine.

PRINTING MACHINES

7—R. B. & F. 1-10 color Print Machines, 40-60" wide.
1—V.V. 10-color Ribbon Printing Machine, complete with Back Grey Washer and Jack.

AGERS

2—Cast Iron Agers, 18' long x 50" & 60" wide.
1—Cast Iron Ager, 12' long x 66" wide.
1—Haveg Patch Ager.
1—Butterworth Cast Iron AGER, 30' lg. x 50" wd.

KETTLES

20—Textile Copper Steam Jacketed Color Kettles, tilting type, agitated, 24 to 100 gallons capacity.

FULLING MILLS

1—James Hunter #10 Fulling Mill.
6—Rodney-Hunt Fulling Mills, gear drive.
2—Single Line Fulling Mills, rubber rolls.

OPEN WASHERS

1—Continuous 60" Boil-Off Machine, steel tanks.
1—Van Vlaanderen 60" Open Washer.
2—Open Washers, 5 & 8 compartments, 50" face.
1—Complete Wash Unit, consisting of Grey Washer, Dry Cans, unrolling stand and motor.
1—6-compartment 30' Washer, 66" wide.

ROPE SOAPER

1—V.V. Continuous Square Formation Washer.

DYE BECKS

20—Butterworth, Morrison & V.V. 6' & 8' Dry Becks, stainless steel and wood tubs.

BLEACHING

8—Bleaching 4-5 ton Kiers, vomit type.
1—5-ton Kier, circulating type.
2—Lincoln 2-roll Rope Squeeze Rolls.

SCOURING & DYEING MACHINES

2—Haveg Dye or Washing Machines, completely enclosed.
1—Sargent 3-Bowl Skein Scouring Machine.
10—Klauder-Weldon Skein Dyeing Machines.
1—Sargent 4-Bowl 48" Wool Scouring Washer.
1—Rodney Hunt 7-String Dyeing Machine.
1—Obermaier Combination Package & Rawstick Dyeing Machine.
1—Buhlmann 100 roller cap. 14-color adjustment skein dyeing machine.

DYE JIGS

6—Dye Jiggs, 54" rubber covered rolls.
1—Battery 4-Morrison stainless steel lined Dye Jiggs, 50", tilting-expanders.

EXTRACTORS

6—V.V. & Tolhurst 54" & 60" rubber & copper basket extractors.
8—V.V. Fletcher & Tolhurst 40", 44", 48" Extractors, copper lined.
10—Tolhurst, American Laundry, Adams, Troy & Bach Copper Lined Extractors, 14", 17", 20", 26", & 32".

CALENDERS

2—V.V. Ball Bearing Calenders, 50" & 60".
2—McCreary 50" & 54" Knit Goods Calenders.
1—Perkins 3-Roll Hydraulic Calenders.
1—Textile 3-Roll 80" Calenders.
1—Butterworth 2-Roll 54" Schreiner Calender.
1—Butterworth 3-Roll 54" Friction Calender.

SHEARS

1—P. & W. 3-Blade Shear, 60½" with lint saving device.
1—P. & W. Double Blade Shear, 66½".

DECATERS

1—Gessner Full Decating Machine, 72" wide.
3—Gessner & Yale Semi-Decating Machines 50", 62" & 72" wide.

SPECIAL OFFERINGS

1—P & S Revolving Stick Loop Dryer.
1—G.L. 3-Section Steel Rope-Washer.
450—Dry Cans, 50" to 108" face, 23" to 84" dia.

DRYERS

3—National & P & S Loop Dryers, 30-65' long.
1—P & S 72" Raw Stock Dryer, automatic feed.
1—Phila. Raw Stock Dryer, 48" automatic Feeder.
1—P & S 36' Loop Dryer, 90" poles, rebuilt by National. Equipped with high speed booster fans, airfins.
2—V.V. 5-Tier, 50" & 60" Net Dryers.
4—Sargent & Hunter Wool Carbonizing Dryers.
1—Single Truck Dryer.
1—Multipass Airlay Dryer.
8—Proctor & Schwartz Yarn Drying Machines.

NAPPERS

5—D & F & Woonsocket Nappers, 60-90".
1—Gessner 20-Roll 66" Double Acting Napper
1—60" Box Napper.
1—Woonsocket 66" 24-Roll Double Acting Napper.

TENTER FRAMES

1—W & J 60' x 50" Swing Tenter Frame.
1—Heathcote Pin Tenter Frame.
1—25' Tenter, with Bakelite Clips.

PALMER QUETCH

3—Morrison & V.V. 50", 60" & 72" Palmer Quetch Units.
1—V.V Palmer Quetch Unit, low type, 65" wide.
1—Butterworth 84" Palmer with 84" mangle.

PADDERS, MANGLES, QUETCHES

3—Textile 50" 2-Roll Dye Padders.
4—Butterworth 50" 2-Roll Starch Mangles.
1—Textile 2-Roll 70" Padder.
5—Butterworth & Morrison 2 & 3-Roll Quetches, 50-72" wide.
5—Quetches, 2- & 3-Roll 36-72" wide.
1—James Hunter 50" Water Mangle.

STEAMING & FINISHING MACHINES

3—Steaming Machines for Tubular goods.
2—C & M Finishing Machines for Tubular Goods.

BUTTON BREAKERS

3—Morrison & V.V. Button Breakers, brass rolls, 50-72".

BEAMERS — BATCHERS

4—Van Vlaanderen 50" & 60" Beamers.
14—Batchers, 48"-72".

EXAMINING MACHINES

2—Examining Machines for tubular goods.

FLAT FOLDERS

4—Elliot & Hall Flat Folders, 42" to 60".

DOUBLERS

5—P & W & Windle 46"-66" Doubling, Reeling and Measuring Machines.

SEWING MACHINES

15—Merrow 60 ABB & 60D3B on tracks.
14—Merrow 60 ABB & 60D3B on portable stands.

PRESSES

1—Logemann All Steel Paper Baler.
2—Shick & Economy All Steel Presses.
3—Gessner 66" & 72" Wool Presses.

LOOMS

24—82" 4 x 1 Automatic Looms.
4—C & K 4 x 4, 80" Rayon Looms.
100—V & K 50" Rayon Looms.
94—Draper Model E 44" Automatic Looms.

COUNTERS

250—Waltham Pick Counters.

WATER SOFTENERS

1—Permutit Water Softener, 103" hg, 63" wd.
2—10 x 10 Vertical Softeners, Zeolite.
3—Pressure Sand Filters, 8" dia. x 20' lg, complete with pipe and valves.

CARDING MACHINES

6—D & F Tatham Breaker Cards, 40" x 50".
2—D & F Finisher Cards, 48" x 50".
7—Whitin Breaker Cards, 48" x 50".

MISCELLANEOUS

Skein Reeler, Universal Tubers, Winders, gas boiler, scutchers, expanders, sewing machines, trucks, generator sets, meters, rubber lined tanks, modine heaters, exhaust fans, pleaters, mandrils, doctor blades, gears, lathes, portable agitators, accumulators, wood shells, Weidemann control unit, humidifiers, etc.

Supplying Textile Equipment for the Drying - Bleaching Weaving - Finishing Printing - Spinning of Rayon-Cotton-Wool Wool Fabrics and Worsteds

THE KEY TO SAVING TIME AND MONEY

FOR OVER A QUARTER CENTURY — A SYMBOL OF CONFIDENCE

CONSOLIDATED PRODUCTS COMPANY, INC.

Address Inquiries to **TEXTILE DIVISION, PATERSON, N. J.**

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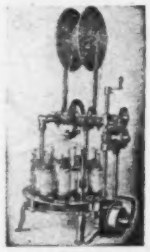
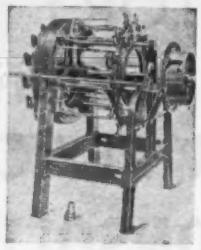


TWISTING • WINDING KNITTING • BRAIDING and ROPE MACHINERY



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of all types for use in the manufacture of parachute cords, military cords, flat tapes, rugs, elastic tapes and braids, wire cords and braids, etc.

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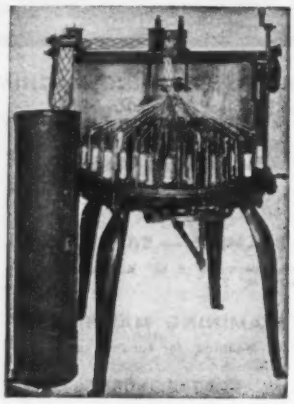
in various makes, for hundreds of uses such as: cords, twines, rope, quimpe, wire, etc.



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of all types and makes for threading, winding and spooling. We have been handling above type of equipment for the past 20 years and solicit any and all inquiries for anything in textiles.

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DRY CANS, set of 12, copper, 28" dia. x 50" face, vertical arrangement
DRYERS, Net Conveyor, 50" & 60" wide
DRYER, LOOP, Proctor & Schwartz, 75'
DYE TUBS, Copper Skein, various lengths
BEAM EXTRACTOR, 50" Van Vlaanderen
EXTRACTOR, 60" Van Vlaanderen, rubber basket, with loading device
EXTRACTOR, 48" Hercules, tinned copper basket. Open top
EXTRACTOR, 48" Amico Hydro, copper basket. Open top
FLOCK STENCIL PRINT MACHINE, with patterns
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INFRA RED units complete with blowers.
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1—3 NASH PUMP, Bronze Casing
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118—4 x 1 C & K Automatic Looms, 48½"
20—4 x 1 C & K Hand Threading Looms, 43½"
190—1 Box Automatic Hopedale Plain Looms.
600—Draper Automatic Looms with Slashing Auxiliary equipment.
200—C & K 2 x 1 Looms.

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1—Butterworth 2 Roll Dye Padder, Brass and Rubber Roll, Motor Driven.

EXTRACTORS

1—American 48" Open Top, Motor Driven Extractor, Copper Basket.
2—Van Vlaanderen 60" Motor Driven Extractors.
2—60" Steam Driven Centrifugal Extractors, Perforated Copper Baskets, Quick Opening Cover, 600 R.P.M.

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1—30" Pin Tenter Frame with Motor and Reduction Box.
1—Van Vlaanderen 30' Tenter Frame, equipped with Stainless Steel, High Speed Spring Type Clips, Reeves Variable Speed Transmission, A.C. Motor.
1—Windsor & Jerauld 40' Tenter Frame, equipped with Stainless Steel Tenter Clips, Reeves Variable Speed Transmission, A.C. Motor Drives.
Above 2 units are suitable for 50' goods.
1—30 Windsor & Jerauld Open Tenter Frame with Steam Heating Coils.
1—60' Windsor & Jerauld Tenter Frame with Proctor & Schwartz Housing.
1—Textile 40' Pin Tenter Frame, Link Belt Drive, #3 Reeves General Electric 5 HP, 60 Cycle, 3 Phase Motor, 60" wide, General Electric Guiders, Steam Heating Coils.
1—Windsor & Jerauld 70' long, 60" wide Tenter Frame, Brass Side Opening Clips.

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1—65" Van Vlaanderen Palmer Tenting Quetsch Unit, with Stainless Clips and Housing.

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1—Set of 20 Cans Textile Copper Cans, 23" diameter, 54" face, Vertical Stack.
1—Set of 18 Cans, 23" x 54" Face, Vertical Stack.
1—Textile Can Drying and Rolling-up machine, Copper Can 36" diameter, 50" Face.
1—Set of Textile Dry Cans, 15 Cans, 23" x 78".
1—Textile Finishing Machinery Company set of 8 Copper Cans—2 Stacks, 4 Cans to a Stack, Vertical Stacks, 50" wide.

LOOP DRYER

1—Proctor & Schwartz Loop Dryer, 50" wide, 20' long, 3 Overhead Fans, Steam Heating Coils.

COTTAGE STEAMER

1—Robert Metcalf Cottage Steamer, 10' long x 8' wide.

DYE BECKS

1—Stainless Steel Lined Sample Dye Beck.
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3—Kitson Finisher Pickers, 2—16", 2 Blade Beaters, Ball Bearing, 12' Apron, Motor Driven.

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108—Deliveries, Saco and Pettee Drawing 1⅜" Metallic Rolls, 12" Coilers.

10—Saco and Pettee 11½ x 5½ Slubbers.
(1) 40 Spindles
(1) 52 Spindles
(5) 60 Spindles

2—Providence Slubbers, 11 x 5½, 60 Spindles, 1¼" Front Rolls, Serial No. 8400 Range.

11—Saco and Pettee Intermediates, 9 x 4½, 92 Spindles, 1¼" Rolls.

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105—Fales & Jenks Spinning Frames, 240 Spindles, 2¾" Gauge, 1⅝" Rings, Whitin, Medium Spindles, Band Driven, 7' Cylinder, Wood Thread Boards, Motor Driven by 5 HP A.C. 440 Volt Motors, V-Belt Drive.

45—Fales & Jenks 220 Spindle Twisters, 3" Gauge, 2" Rings, Wood Thread Boards, 8 Slat Wood Creel, 7½ H.P. Motor Drive, 440 Volt, Clover Leaf Heads.

15—Easton Burnham and Draper Spoolers.

15—Universal #50 Winders.

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1—Butterworth 42" Hydraulic Schreiner 2 Bowl Calender, equipped with Cotton and Steel Engraved Rolls, Gas Heated Friction Unrolling and Batcher, Tension Rolls, complete with Accumulator and Pump, direct connected to General Electric 3 H.P. A.C. Motor, 50 Volts, 60 Cycle, 3 Phase, 900 RPM, Type M.T., with Drum Controller, Magnetic Switch and Grids.
1—Van Vlaanderen 3-Roll Finishing Calender, Wool Felt Bowls, Large Diameter.

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1—Eastwood Gray Goods Folder, 60" wide.
3—E & H Flat Folders, 45" to 60" wide.

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7—Copper Steam Jacketed Mixing Kettles, equipped with Double Motion Bronze Agitators, 70 to 350 Gallons capacity.

DECATORS

1—Parks & Woolson 72" Semi-Decator, with Blanket, Nash Vacuum Pump and Motor.

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2—Parks & Woolson 54" Doubling and Reeling machines.
1—Van Vlaanderen 60" Doubling and Winding machine.

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1—Set of Textile Finishing Machinery 8 Copper Cans, 2 Stacks, 4 to a stack, Vertical Stacks, 50" wide.

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5—Print Machine Motors, 23 to 35 H.P.

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20—C & K 62" Looms 4x4 Box, with motors
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5—**SLUBBERS** 12x6 and 11x5½.
12—**SPEEDERS** 8x4.
4—**TWISTERS** 4½" Gauge.
6—**TWISTERS** 4" Gauge
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45—**WINDERS,** Rayon Double Deck.
3—**WINDERS** Cop 30 Spindles each.
2—**WINDERS** Bottle 40 Spindles each.
3—**WINDERS** #90 V-Belt Drive.

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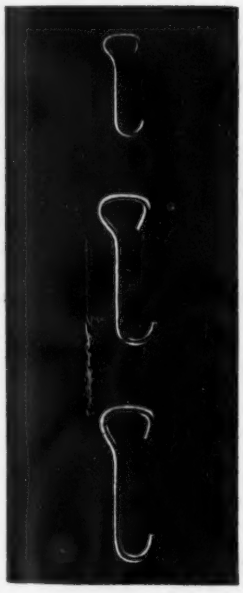

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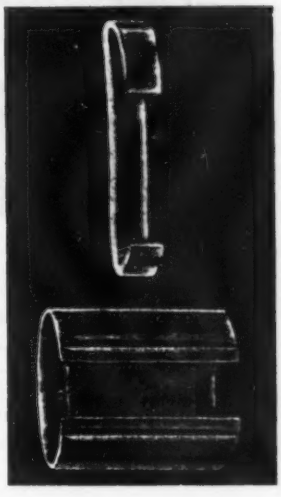

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